

Date of Hearing: June 21, 2010

ASSEMBLY COMMITTEE ON NATURAL RESOURCES

Wesley Chesbro, Chair

SB 624 (Romero) – As Amended: May 19, 2010

SENATE VOTE: 36-0

SUBJECT: State rock

SUMMARY: Removes serpentine as the state rock and declares that serpentine rock contains a known carcinogen that increases the risk of the cancer mesothelioma in humans.

EXISTING LAW establishes serpentine as the official state rock and lithologic emblem.

THIS BILL:

- 1) Declares that serpentine contains chrysotile asbestos and that exposure to it increases the risk of the cancer mesothelioma.
- 2) Declares that California has the highest rate of mesothelioma-related deaths in the nation.
- 3) Declares that California should not designate serpentine as the state rock due to its known toxic health effects.
- 4) Declares intent to remove serpentine as the official state rock and provide a suitable replacement.
- 5) Removes serpentine as the official state rock and lithologic emblem of and replaces "serpentine" with a blank.

FISCAL EFFECT: Non-fiscal

COMMENTS:

Background

California has the widest variety of rock types of any state. In 1965, California was the first state to designate a state rock when it made serpentine its official state rock and lithologic emblem with the passage of AB 265 (Gibson), Chapter 963, Statutes of 1965. Serpentine is a metamorphic rock composed of common rock-forming hydrous magnesium iron phyllosilicate $((Mg, Fe)_3Si_2O_5(OH)_4)$ minerals that may contain other elements including chromium, manganese, cobalt and nickel. Serpentine is formed via the hydration and metamorphic transformation of ultramafic rock from the earth's mantle, which occurs at tectonic plate boundaries. In addition to serpentine's mining significance in California, UC Davis Geology Professor Emeritus Dr. Eldridge Moores describes serpentine soils often being associated with gold mineral deposits in the foothills of the Sierra Nevada mountain range and therefore a part of California's gold rush history.

Serpentine rock and soils are widespread within California. Many rare plant species are limited to serpentine environments including trees, shrubs, and herbaceous plants. Some of these rare ecosystems and plant communities are unique to California and are known world-wide for their presence here. Dr. Moore also indicates that serpentine soils are also known to have the ability to chemically fix carbon dioxide (CO₂) into the solid mineral magnesium carbonate. Due to this ability, serpentines are increasingly considered for their carbon sequestration abilities as California and the United States consider the accumulation of greenhouse gases in the mitigation of global warming. Approximately 20 kinds of serpentine exist, but the three most common types of serpentine are antigorite, chrysotile and lizardite, which are used in a variety of applications including construction, art, jewelery, and textiles.

Chrysotile serpentine, also known as white asbestos, is the most common form of asbestos. Mg₃(Si₂O₅)(OH)₄. Chrysotile asbestos has been heavily used in past years as a thermal and electrical insulator material due to its flame-retardant and chemical resistant properties. Commonly found in a fibrous form, chrysotile asbestos is also flexible and strong, adding to its appeal as a construction material. The word "asbestos" is of Greek origin meaning "indestructible." Asbestos fibers can be released during serpentine rock excavation, and can be continually released if it has been used as a flooring or road surface. Once asbestos has been made into an insulating form, it will not necessarily release fibers into the air unless it is disturbed. Amphibole serpentine is another type of asbestos which is commonly associated with detrimental health effects including cancer and asbestosis.

Asbestos has a long history of being hazardous to human health. During the 1st century AD, Greek and Roman populations observed that slaves responsible for weaving textiles containing asbestos fibers often demonstrated pulmonary illnesses. In the late 19th century in the midst of industrialization, health problems associated with the manufacturing with asbestos were observed in both Great Britain and France. The author's office provided a 2006 scientific review of malignant mesothelioma mortality in the United States from 1999 to 2001, published in the International Journal of Occupational Environmental Health as background material. Malignant mesothelioma is often associated with, but not limited to, the human lung area, or pleura. Examining 7,524 cases of the cancer via death certificates, the study found that, among other findings, that persons including plumbers, pipefitters, mechanical engineers, ship and boat builders/repairers, and industrial chemical workers had a significantly elevated proportional mortality ratio (PMR) for malignant mesothelioma. The PMR represents the number of deaths from a specific cause in a specific period of time per 100 deaths from all causes in the same time. In its conclusions, the study indicates that it was not able to make a definitive conclusion regarding the relationship of the mesothelioma to that of asbestos or other mineral fibers because that information was not included in the death certificates. Malignant mesothelioma can be caused by a variety of factors in the absence of asbestos exposure, however there is a wealth of epidemiological research that indicates that amphibole asbestos exposure can significantly increase the risk of malignant mesothelioma.

The last operational Californian asbestos mine was closed in 2002.

Legislative history

AB 265 (Gibson), Chapter 2, Statutes of 1965, established serpentine as the official state rock and lithologic emblem of the state of California. The bill was unanimously passed through the state

Senate and signed by Governor Edmund "Pat" Brown possibly in order to encourage the state's asbestos mining industry at the time.

SB 1678 (Gregorio), Chapter 1067, Statutes of 1976, established the Occupational Carcinogen Control Act of 1976, establishing California as the first state to actively inspect for carcinogens in the workplace. The Act established that use in the workplace of any of sixteen known carcinogens, including asbestos, be reported to the state.

In October, 2009, the Manhattan Beach City Council passed Resolution 6223 which urged "the state legislature to repeal the designation of serpentine, the host of asbestos, as the official state rock, in support of world eradication of asbestos for public health as urged by the Asbestos Disease Awareness Organization" (ADAO) as a part of its "Drop the Rock" campaign.

Committee amendments

Since particulate matter from most rocks may cause lung and other health risks when disturbed and mined from their environments the author and committee may wish to amend SB 624 to simply repeal the section designating a state rock and not seek a replacement state rock.

REGISTERED SUPPORT / OPPOSITION:

Support

Asbestos Disease Awareness Organization
Belkin International, Inc.
Children's Hospital Los Angeles
City of Manhattan Beach
Consumer Attorneys of California
Environmental Information Association
International Brotherhood of Ironworkers Local 433
International Union of Operating Engineers
The John McNamara Foundation
Kazan, McClain, Lyons, Greenwood & Harley
Mesothelioma Applied Research Foundation
Veterans of America
Water, Kraus & Paul Attorneys and Counselors
13 individuals

Opposition

None on file