

MEMORANDUM

CITY/BOROUGH OF JUNEAU

155 South Seward Street, Juneau, Alaska 99801

TO: Merrill Sanford, Chair
Public Works and Facilities Committee

DATE: August 5, 2005

Randy Wanamaker, Chair
Lands Committee

FROM: Rorie Watt, PE, Chief CIP Engineer
Engineering Department

FILE: 1251

RE: **Asbestos at Stabler's Quarry**

There has been much concern and comment over the last two weeks about naturally occurring asbestos in a CBJ owned Stabler's Point rock quarry. This memorandum is intended to help elected officials better understand the issue. The information reflects my best efforts to portray the issue objectively and factually.

What is Asbestos?

Asbestos is the name given to commercial products manufactured from half a dozen naturally occurring minerals. The minerals naturally occur in over two thirds of the earth's crust. Under certain geological conditions, these minerals form asbestiform fibers, long fibrous crystals which have attributes that make them useful in a variety of building materials.

Two main types of asbestos exist: serpentine and amphibole. Amphiboles have been found to be significantly more dangerous than serpentines. Tremolite is an amphibole. The private tests taken in early July at Stabler's indicate the existence of tremolite.

What products could contain asbestos?

The list is lengthy, but includes concrete pipe, ironing boards, aprons, car brake pads, home insulation, pipe insulation, vermiculite, fire proof fabrics, blankets, heat shields, floor tiles, window putty, sheet rock, dry wall mud, adhesives, and roofing. Asbestos has been used to manufacture 3,000 different products. EPA considers any building built before 1980 to contain asbestos. Asbestos is continued to be used world wide, Canada is a major producer and exporter of chrysotile asbestos. Chrysotile is the only serpentine asbestos that is commercially used.

Asbestos Exposure:

There are hundreds of occupations where workers were exposed to harmful levels. Asbestos associated diseases are commonly found in such jobs as: pipe fitters, janitors, maintenance personnel, construction workers, railroad workers, ship builders, insulators, plumbers, mechanics, telephone workers, electrical workers, fire fighters, and asbestos abatement workers. People who work, live, or attend school in



buildings containing asbestos products are also considered at risk.

Asbestos exposure is divided into 3 main categories. Primary exposure occurs in miners and millers. Secondary exposure, which is the largest and clinically most significant group, includes occupations involved in the industrial and commercial use of asbestos (e.g., manufacturing plants, construction). The third category is non-occupational (environmental or para-occupational) exposure to contaminated air. Non-occupational exposure (e.g., schools, offices) does not appear to pose significant health risks. The frequent finding of asbestos bodies in the lungs of city dwellers at autopsy, as high as 60% in New York City, suggests that environmental exposure is widespread.

Regional Geology:

Juneau is situated in the Gravina belt, an area that extends through Southeast Alaska from Ketchikan to Haines. Stabler's Point quarry consists of the hardest local rock (moderately metamorphosed mafic volcanic rock of the Upper Jurassic to Cretaceous Gravina Belt), and due to its formation, it is expected that dozens of different minerals can be found in the rock.

Scattered veins, lenses, and veinlets of an asbestos mineral have been found or reported in the following quarries: Stabler's Point, Lemon Creek (formerly Horecny), Treadwell, Upper and Lower Fish Creek (Eaglecrest road), and Bonnie Brae. It is likely that the mineral could be found in many more locations in Juneau. Basically, anywhere where we have high quality local rock, we are likely to find asbestos minerals.

In Stabler's the mineral is far less than one percent of the quarry.

What kind of Asbestos:

Based upon visual inspection, the asbestos material at Stabler's resembles the serpentine mineral Chrysotile, vs. the amphibole tremolite. Given the rock and alteration types, the more likely mineral would be chrysotile. Positive identification can only be determined through microscopic analysis.

Testing Performed:

Samples have been submitted for laboratory testing for the following:

Air sampling during quarrying operations

Rock samples for mineral identification

Drill tailings

Crusher Fines

Asphalt Plant Fines

Processed Rock

Test results will be available beginning the week of 8/8/05.

California:

Serpentine is the state rock of California. In the late 1990's, a similar concern arose as land development spread east from Sacramento into areas with large quantities of serpentine and chrysotile. Probably not coincidentally, some of these areas were formerly gold mining towns. Eventually, California developed statewide regulations regarding concentrations of chrysotile in quarry products. Their history appears to be very analogous to what we are now experiencing. California standards regulate gravel products that contain more than 0.25% asbestos.

Staff has sampled and submitted tests in accordance with the California standards. MSHA has not requested that the quarry be closed. EPA has not indicated its desire to become involved. Local contractors can generally be described as cautious and concerned about the issue. Some have opted in the short term to not use the Stabler's quarry until test results have been returned.

Summary:

Important issues surrounding asbestos in the quarry are worker safety, public safety, perception, economics, and project timelines. Inexplicably, the prevalence of locally occurring asbestos has not previously been raised as a public issue.

I do believe that contractors working in the quarrying and processing business should become better educated about worker safety while working around rock dust. Based on what I have learned in the past two weeks in this issue, I would make the same statement irregardless of the presence of asbestos. Staff is coordinating with MSHA to provide worker training, and work environment monitoring equipment. This program is performed in cooperation with the National Stone, Sand and Gravel Association. Additionally, MSHA has agreed to send an industrial hygienist to Juneau to evaluate worker safety at the quarry.

Based on the knowledge that we have available, I also do not believe that there is a public health issue. This opinion is based on:

1. Low concentration of mineral
2. Use of products as fill, rip-rap, road gravel, and pavement rock
3. History of asbestos related disease from chronic exposure

If the community desires to continue to use higher quality local rock, the CBJ may need to consider adopting local regulations. The California standards are a good starting point.