



Bulletin No. 18

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SKAGWAY GETS CLEAN BILL OF HEALTH

We evaluated the exposure of Skagway residents to heavy metals and especially to lead, beginning our investigation in September 1988. In November 1988 and September 1989, residents participated in voluntary blood test programs to measure levels of lead and erythrocytic protoporphyrin. Results of the 1988 investigation, conducted in conjunction with the national Centers for Disease Control, were reported in several interim reports, the last published on December 20, 1988. This bulletin summarizes the results of the blood testing done in September 1989 and our final findings and recommendations.

In September 1989 we drew blood from 167 residents of Skagway. We were not able to report results on three people because of low specimen volume or labeling problems. Of the 164 residents for whom we have results, 48 were 0-18 years old, and 116 persons were older than 18 years.

- Of 48 children tested, none had blood lead levels exceeding 15 mg/dl.
- Of 116 adults, only one employee working at the ore terminal had a blood lead level higher than 21 mg/dl. The worker's level, 28 mg/dl, was well below the OSHA worker monitoring level of 40 mg/dl.

Of the 164 residents tested in September 1989, 49 were tested in November 1988. When we compared 1988 and 1989 matched results, there was no significant change in blood lead levels overall for the group of 49 or broken down into three age groups.

We compared the distribution of blood lead levels among Skagway residents to those found in the national NHANES II survey. We tested 158 Skagway residents in November 1988 and 164 in September 1989. Of those tested in 1989, 49 were also tested in November 1988. Therefore, we have blood test results from 273 Skagway residents.

- Nationally, only 22.1% of the 9,933 persons tested had blood lead levels less than 10 mg/dl compared to 78.4% of Skagway residents.
- Nationally, 85% of those tested had blood lead levels less than 20 mg/dl compared to 97.4% of Skagway residents.
- Except for ore terminal workers, all Skagway residents had blood lead levels of 20 mg/dl or less.
- Skagway residents have much lower lead levels than the U.S. population tested in the NHANES II survey.
- For the community of Skagway as a whole, mean blood lead levels in 1988 and 1989 are similar. No change has occurred in overall blood lead levels of the community.
- The mean blood lead levels of children and adults are similar to those found in pristine, rural communities with low lead exposures.

Based on the results of all tests and findings, the community of Skagway does not have a serious health problem from lead. The contribution to the body burden of lead from the ore is minimal. Risk from exposure to lead ore cannot be said to be zero, but the contribution from ore to the body burden of lead among Skagway residents is so low as to constitute no basis for public health concern.

No further environmental samples "on demand" are warranted. Without a systematic research plan and detailed research design, results from such samples cannot be meaningfully interpreted and serve no useful purpose. There is no useful purpose to be served by testing further samples of house dust, vacuum bag material, home grown produce, etc.. Results will not be useful in assessing effectiveness of clean up efforts and have little value to individuals. In view of the low blood levels in the community, it is very unlikely that all exposures to lead could be determined, and measures to reduce exposures to lead would not be different from those already recommended.

Decisions on how much to clean or what to eat or where to play are personal ones. What is critical is to know that risk of adverse health effects is very small and the amount of reduction of risk from extensive personal efforts to reduce lead will be so small as not be able to be measured.

Recommendations

Common sense measures recommended in December 1988 will help reduce exposure to ore. These measures include:

- Clean up of ore terminal operations, frequent street cleaning, and washing of ore trucks as is being done;
- Attention to simple personal hygiene and housekeeping practices such as
 - increased emphasis on hand washing,
 - wet mopping and dusting with a dampened cloth inside homes, and
 - removing street shoes at the door; and
 - rinsing of locally grown vegetables to remove surface dirt; and
- Good nutrition through a well balanced diet with adequate amounts of iron, calcium, and vitamins.

Further environmental sampling should be done only as needed to monitor compliance with the existing clean up program.