



**Public Health**  
Seattle & King County

HEALTHY PEOPLE. HEALTHY COMMUNITIES.

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August 31, 2000

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Dear Louise:

We are writing to reply to your request to review the information on cancer cases sent to you by members of the Skykomish community earlier this year. We are sorry that it took longer than we originally thought to get back to you, and we hope this letter answers your questions. We certainly understand and support the concerns residents have about the presence of fuel oil in their environment, and we hope the cleanup you described is proceeding smoothly.

We reviewed the list of patients, cancer types and year of death faxed by you to Paul Murakami, and reviewed and discussed a summary of the literature on cancer and exposure to fuel oil provided by the Agency for Toxic Substances and Disease Registry (ATSDR).<sup>1</sup>

The list of cancer diagnoses extends from the "early 1980s" (as noted on the list) to the present, and includes 16 reports of cancers. There are a variety of cancer types listed, including three breast cancers, two prostate cancers, two pancreatic cancers and one each for cancer of the bladder, lung, stomach, bone, multiple myeloma and leukemia. There were three cancers of unknown type. This distribution is similar to the distribution of cancer types found in Washington State, where breast cancer is the most common type, followed by prostate cancer. The distribution of cancers that you provided is not unusual. We are generally more concerned when we see a distribution of cancer that is not the same as that seen in the state as a whole.

The list you provided has nine different cancer types, many of them with one case each. Cancer is a collection of different but related diseases, generally with different causes. (The few known exceptions to this generalization include exposure to strong carcinogens such as tobacco smoke or ionizing radiation, both of which can cause multiple types of cancer.) We usually look for patterns in specific cancer types when investigating a potential environmental concern. Given the

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<sup>1</sup> US Department of Health and Human Services, ATSDR. *Toxicological Profile for Fuel Oils*. June 1995



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variety of types of cancer, we think it is extremely unlikely that the cancers you listed were all caused by a common environmental exposure.

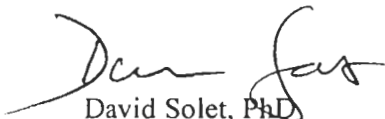
We also compared the list of cancers you provided to the cancers listed in the ATSDR publication on fuel oils. There have not been sufficient studies looking at the relationship of cancer with exposure to fuel oil, in general, or diesel, in particular, to draw conclusions about the potential role of exposure to diesel oil in the development of cancer. The ATSDR document refers to all findings as equivocal or not definitive. Nonetheless, they cite epidemiological studies with humans where associations were found with exposure to inhalation of diesel or fuel oil fumes and laryngeal cancer, oral and pharyngeal cancer, and acute leukemia. These findings are based on one study for each type of cancer and all of the studies had major limitations. The evidence for development of skin cancer, liver cancer and lymphomas in mice with dermal exposures to fuel oil, including diesel, is equivocal. Some studies found effects, while other studies did not; some found effects in mice of one sex only; some found effects at lower doses, but not higher doses. In summary, while the ATSDR document classifies fuel oils as both animal and human carcinogens, there does not seem to be a clear relationship between exposure to fuel oils and a particular type of cancer. You have reported only one case of cancer (i.e., leukemia) for the cancers that ATSDR suggests might be associated with fuel oils. This lessens our concern that inhalation of diesel vapors or dermal exposure to diesel fuel is causing cancer in the community.

Unfortunately, cancer is a common disease in King County and the U.S. One in three people will be diagnosed with cancer in their lifetime, and more than one in five deaths to King County residents are from cancer. You mentioned that the community consists of about 250 residents, and depending on their ages, 16 cancers in the last 20 years or so may not be an usually large total number.

To summarize, a review of your data did not point to any unusual pattern of occurrence of cancer for this community. We did not see an unusual distribution in the types of cancer you mentioned. Because of the variety of cancer types, we think it's extremely unlikely that they all arose from a common environmental exposure. Finally, in studies of people and laboratory animals, only one of the cancers mentioned in your list have may be related to exposure to fuel oil.

We hope this has provided some useful information and helped to address concerns about cancer in the community. If you have any questions, please feel free to contact either of us at the telephone numbers listed below.

Sincerely,



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cc: Paul Murakami, East Regional Health Officer, PH-SKC  
Ngozi Oleru, PhD, Chief, Division of Environmental Health, PH-SKC

This is a list of the cancer patients that I have been able to document for Skykomish. I took the liberty of extending the range back in time, since most of the oil has not been noticeable for many years. All of the people listed here were residents of Skykomish for a number of years. Hope this helps you.

NAME	TYPE OF CANCER	YEAR OF DEATH
Robert Dean	Unknown	Early 1980s
Emma Flynn	bladder (in Skykomish >30years)	Early 1980s
John Cashen	Lung? (Smoker)	Late 1980s
Mrs. Fosterling (Mother of Rena Bishop)	Unknown	About this period
Robert Datma	Pancreatic	About this period
Ruth Norton	Multiple Myeloma	mid- 1990s
Andrea Hankins	Stomach	mid - 1990s
Loire Robinson	Leukemia	1998?
Rena Bishop	Pancreas	2000
Lucille Dean	Unknown	2000
Pat Ackerman	Breast	Alive
Diane Dunagin	Breast	Alive
Eric Casperson	Prostrate	Alive
Roth Essen	Prostrate	Alive
Bonnie McClausland	Breast	Alive
Linda Martin	Bone	Alive

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