

Dust and Potential Health Problems

Why is dust a concern?

EPA health research tells us that dust can cause health problems. People with heart and lung disease and those with breathing problems can be impacted when inhaling dust. Even healthy people can have short term irritation when breathing dust. Dust is a nuisance, it settles on your tables, your coffee cup, your subsistence foods, and salmon drying racks.

Dust has been around for generations. Winds have been blowing dust off glaciers and dry river banks forever. We have lived with dust for thousands of years, but that doesn't make dust healthy to breathe. Now, we help throw dust back into the air with our four wheelers, trucks and cars.

In the past three years the Alaska Department of Environmental Conservation (ADEC) received dust complaints from over 50 communities. Is dust a problem in your village?

If you believe you have a dust issue, ADEC would like to help you find a solution to this potential health threat.

Causes of Dust

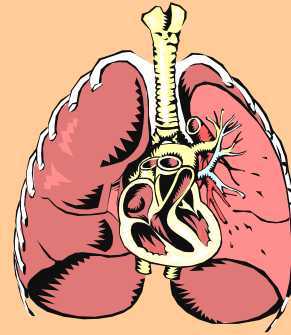
- Wind across dirt roads, runways riverbeds
- Human activities on lots without vegetation
- Quarry operations in gravel pits
- Vehicles and four wheelers on dirt roads
- Residents have told us that traffic is increasing in villages over the past 10 years, making the dust problem worse.

Sources of Dust

- Dirt roads, runways
- gravel pits, dry river beds, unvegetated land

Health Impacts

ADEC has heard there is an increase in respiratory problems in the villages. Health studies indicate breathing problems are either somewhat worse or higher than expected in rural Alaska



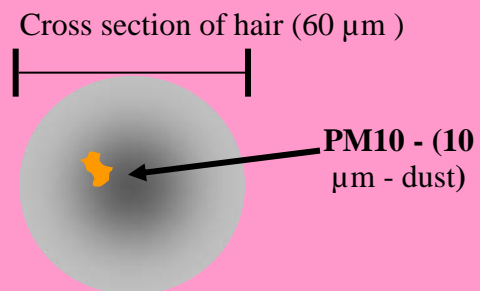
Health problems associated with dust:

- Aggravates existing heart and lung disease
- Damages lung tissue
- Mostly impacts children, seniors, people with asthma, people with heart conditions

Has been shown to increase hospital/clinic visits

How does ADEC measure for dust?

ADEC has equipment that can measure for dust - particles less than 1/10 the diameter of your hair.



Dust is a very small particle that can reach the inner lung. ADEC compares their measurements to the following EPA standards for dust:

- 24 hours – 150 micrograms per cubic meter
- Annual – 50 micrograms per cubic meter

Contacts

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How do I evaluate whether or not my community has a dust problem?

1. Is there a problem?

- Do you frequently see lots of dust
- Do you get lots of complaints about dust
- Does 4 wheeler traffic raise lots of dust on dry days



4. Obtain training on air monitoring and project management

- Contact ITEP for monitor operations training
- Take a training class in developing quality assurance project plan training class
- Contact the state for air monitoring or technical assistance

5. Monitoring set up

- Follow EPA siting guidance
- Select a good monitoring site
- Use EPA reference monitors if possible
- Procure air samplers
- Install monitors



2. Community support:

- Present concerns to community and tribal councils
- Get council approval to conduct an investigation
- Get a resolution of support for dust monitoring

3. Regulatory and financial support:

- Contact EPA tribal coordinator about funding opportunities
- If revising your IGAP grant is an option, make sure it is a council priority
- Must obtain EPA approval to spend IGAP funds on air monitoring

6. Monitor operation to collect a representative dataset

- 24 hour sampling – midnight to midnight
- Minimum monitoring period May – Sep
- Contract for filter weighing

7. Develop final report and present to village/council

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What options are available to control dust?



Control Method	Advantages	Disadvantages
Water	Relatively cheap. Effective. Water generally available.	Can dry out fast, needs frequent application. Too much water makes the road or trail muddy
Chemical additives put in the water, such as salts	help form a longer lasting “crust” over the road	May be expensive to ship supplies. Some additives may be hazardous. Runoff may not be environmentally friendly
Other chemicals can be added directly to the roads, like oil	Likely more permanent. It is a use for waste oil	Runoff is hazardous to surrounding environment
Speed limits and limits on mechanized travel	Can be done locally with a resolution. Gets community involved in solving problem	Hard to enforce. Not always effective if windy
Rerouting of traffic away from groups like elder homes and schools	Can be done locally with a resolution. Gets community involved in solving problem	Depends on village layout, may not be possible
Paving	More permanent than other methods. Good surface for driving	Expensive. Will require a great deal of effort. May not be that effective in areas with dirt roads turning onto the pavement or much wind. Requires cleaning

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