

***Dust Suppression in Alaska
A Changing Process & “Necessity”***

for

Alaska Miners Association

Fairbanks Branch - Breakfast Meeting

January 9, 2009

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&

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Topics to Discuss

- “Basic” Alaskan Dust Control – recent history
- EPA Regulations: PM-10; ramifications of non-attainment
- Recent and anticipated Dust Control Research
- Emmonak 2009: Goals, Uses of Research, and Hopes
- Future Actions and Needs – for Dust Control progress

then - QUESTIONS ?

Boundary: Site Visit one month after application

Sept. 20, 2007

Remember this?

Pretty typical “synthetic fluid” application



Boundary – typical EK-35 application with tote & spray bar



August 2007

We're proud of our successes, of course



**Sheldon Point Airport:
Airport Contractor with well
compacted runway, EK-35,
and SKID MARKS !!**

09.26.2007

**Teller; “after” EK-35 was applied in mid-August
(note – water on surface negatively affected aircraft traction)**



Costs of dust control

	Work Area (MSF)	Palliative Cost / SF	Application Cost	Dust Control <u>Total</u> Cost / SF
<u>Lignosite:</u>				
Fort Yukon ('06)	431	\$0.08	\$35,000	\$0.16
<u>Permazyme:</u>				
Chitina ('05)	225	\$0.02	\$20,000	\$0.11
McCarthy ('06)	178	\$0.04	\$18,000	\$0.15
<u>EK-35:</u>				
Chicken ('05)	150	\$0.25	\$12,000	\$0.33
Teller ('07)	190	\$0.38	\$35,000	\$0.51
Boundary ('07)	130	\$0.20	\$20,000	\$0.35
Sheldon Point ('07)	165	\$0.60	\$21,000	\$0.72

DOT&PF Dust Palliative Experience: 2001- 2008

(just at airports, both Northern & Central Regions)

EK-35

Red = dust product applied by Contractor

2001: 1 = **Kiana**

2002: 0 ? **Black** = product applied by DOT&PF

2003: 1 = **Russian Mission**

2004: 1 = **Birch Creek**

2005: 2 = Eagle, Chicken

2006: 6 = **Kobuk, Koyukuk,** Minchumina, Bettles,
Chevak Kantishna

2007: 8 = **Tanana,** Teller, Nunam Iqua, Nulato, Huslia
Stevens Village Circle Hot Springs, Boundary

2008: 0 ?

Permazyme

2004: Birchwood?

2005: Chitina

2006: McCarthy

Durasoil

2006: 1 = **Kokhanok**

2007: 0 ?

2008: 5? = Ambler, Brevig Mission, Emmonak, Kiana, Stebbins (+Savoonga)

2009: CR = Pt Heiden, Togiak, Seldovia, and Pt Graham? + 9 – 10 NR airports

SDS4 (by 3M)

2008 - on Rozak Rd = North Pole

Key Aspects of Effective/Protective Dust Palliative Application

1. Supposed to get “dust control” result (**measured HOW!**)
2. **NO** environmental concerns (villages very sensitive)
3. Topical (sprayed atop prepared surface) application, which is easily accomplished? (use local helpers)
4. No specialized equipment or training needed to apply?
5. Helps if the product is “repairable”, can fill potholes?
6. Needs to work with various types of geological materials
7. Extended service life is desirable: 3 or 4 or 5 years?!
(Traffic “service”/ADT is: a village road or highway use, or airports?
Note: Service life also depends on weather/environmental conditions
Having rain during/after application is BAD; < 40° F is **too cold?**)
8. Hoping for “low” cost, per SF-year? (**How low?**)
Keep in mind that freight costs are critical, 275-gallon totes are 2,200#

PM-10

**“Coarse” Particulate Matter,
10-micron or smaller**

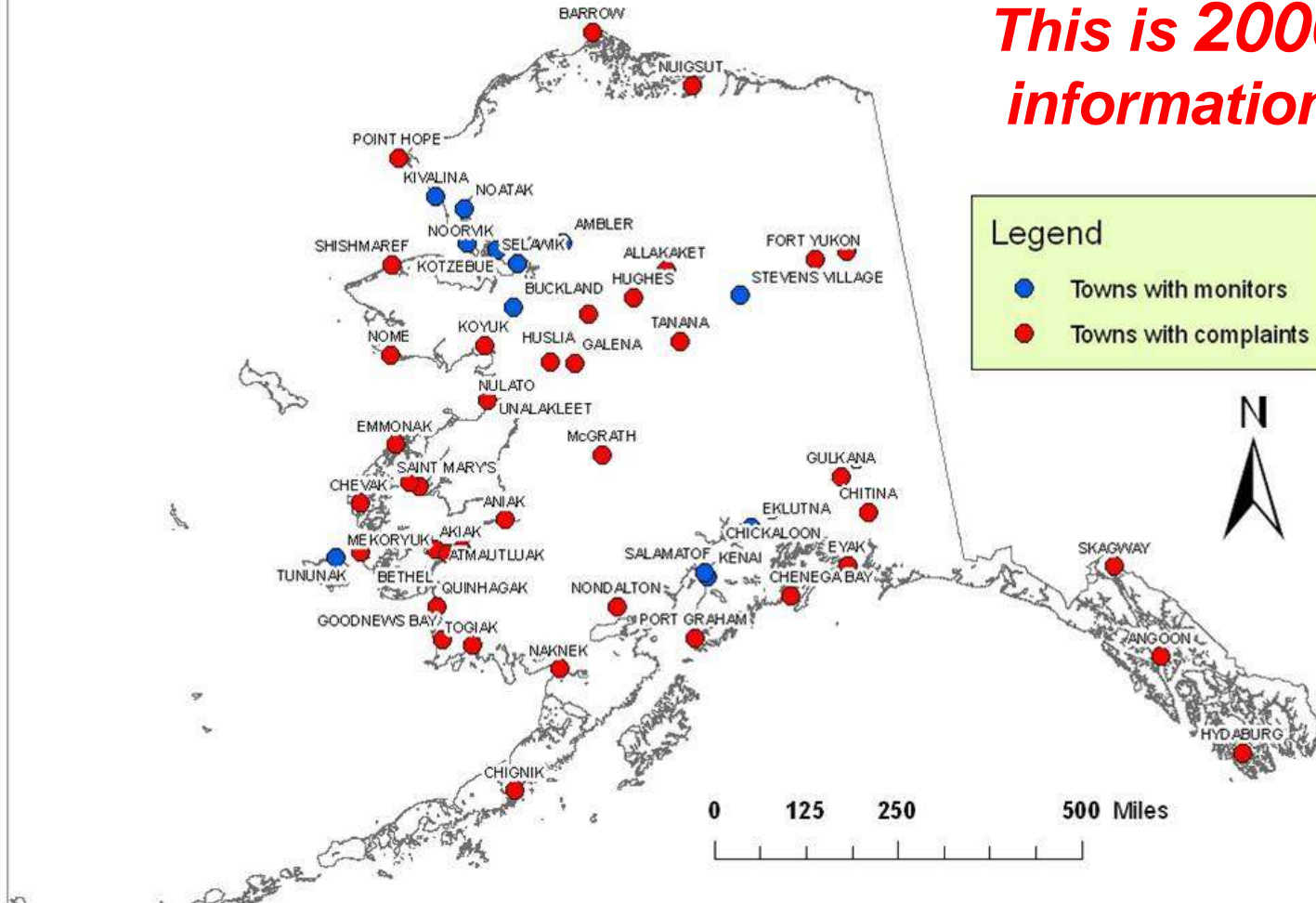
EPA retained their federal regulations, in late 2006, to a “tight”
24-hr standard: **150 micrograms / cubic meter of air**

Note: Microgram = 1 millionth of a gram

**This summer, at least 20+, possibly as many as 100?,
Alaskan native villages will fail air quality testing and
thus **non-attainment** of national air quality standard!**

PM10 Communities - Monitoring and Complaints

This is 2006 information



ADEC will have to deal with complaints, and begin to apply solutions which will cut down on exceedances of health standards, by 2013?

QUESTIONS?

09.08.2006

Lake Minchumina Airport: Aerial View