

Investigation of methodologies to control dust on county roads in western North Dakota

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What the Counties Want

The “Silver Bullet” Counties are looking for to control dust should:

- 1. Be easy to handle and apply**
- 2. Provide control for a year**
- 3. Allow the road to be maintained**
- 4. Be cost effective – preferably inexpensive**
- 5. Safe for traffic and the environment**

Control methods

Water

Magnesium chloride

Calcium chloride

Soil stabilizers

Synthetic polymers

Enzymes

Petroleum emulsions

Control methods

Bio – based oils

Lignin sulfonate

Tall oil pitch

Oilfield brine

Crude oil

Aggregate modification

Recommendations

Counties should include gradation and P.I. specifications when bidding aggregate

Scoria should be used only on low traffic volume roads such as drilling pads and site access roads

To be effective, dust control products need to penetrate the road surface or be mixed in

Recommendations

- **Several applications of the chlorides may be needed to provide satisfactory dust control**
- **Chloride application frequency can be reduced after three to four applications**
- **Effectiveness is affected by the volume and types of traffic as well as weather conditions**

WHAT'S NEXT

- **Identify better oil field brine sources - \$25,000**
- **Evaluate regional approach to procurement and distribution of aggregate, magnesium chloride, or oilfield brine - \$15,000**
- **Evaluate treatment technologies that allow beneficial use of oilfield drill cuttings - \$37,000**