

ATTACHMENT 2

POLICY ON DUST PALLIATIVE USE IN THE PAHRUMP REGIONAL PLANNING DISTRICT, NYE COUNTY, NEVADA

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Environmental / Regulatory Requirements

General Use Requirements

Application Guidelines - Traffic Area Applications

Application Guidelines - Non-Traffic Area Applications

Glossary of Terms and Definitions

GLOSSARY OF TERMS AND DEFINITIONS¹

Application rate - For liquid suppressants, the volume of mixed solution (concentrate plus water) applied per unit area of land. Typical application rates range from 0.10 to 1.00 gallons of mixed solution per square yard (gallon/yd²) of land.

Application rate - For fibers and mulches, the mass of solids in pounds applied per unit area of land. Typical application rates range from 500 pounds per acre to 6,000 pounds per acre.

Brine - Solution of salt in water. Strength of brine measured by percent solids by mass. For example; a 40% magnesium chloride brine has 40 percent solids by mass.

Deliquescent salts - Calcium chloride and magnesium chloride salts are deliquescent (readily drawing moisture from the atmosphere and melting). Calcium chloride is available as flake or brine. Magnesium chloride is available as brine. Brine solids contents are variable.

Dilution ratio - The ratio of the volume of concentrate to volume of water. Example; 1:4 means 1 volume of concentrate is to be mixed with 4 volumes of water, or 100 gallons of concentrate would be mixed with 400 gallons of water.

Dust Palliative - A hygroscopic material, non-toxic chemical stabilizer or other dust palliative which is not prohibited for ground surface application by the EPA or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, as a treatment material for reducing fugitive dust emissions. Water, solutions of water and chemical surfactants, and foam are not dust palliatives for the purpose of these Ordinances.

Dust Suppressant - Water, hygroscopic material, solution of water and chemical surfactants, foam, non-toxic chemical stabilizer or any other dust palliative which is not prohibited for ground surface application by the EPA or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, as a treatment material for reducing fugitive dust emissions.

Fibers/mulches - Blends of wood fiber or paper mulch with binder and or tackifier in water. Fibers and mulches are usually blended on-site. Formulation types and concentrations are often proprietary and depend on soil conditions and intended use.

Hygroscopic - Readily drawing moisture from the atmosphere but not melting. Dry sodium chloride is hygroscopic.

Lignosulfonate - By-product of sulfite paper-making process. Available as 10-25 percent volumetric residual solution, as a 50 percent volumetric residual solution, or as powdered solid to be mixed with water. May have high initial BOD (biological oxygen demand).

¹ Principal source: Bolander and Ymada, Dust Palliative Selection and Application Guide – US Department of Agriculture, November, 1999.

Organic non-petroleum products - Tall oils; Distilled product of kraft (sulfate) paper-making process. Available as a 40-50% volumetric residual concentrate to be diluted with water.

Organic non-petroleum products - Vegetable oils; typical sources include canola oil, cottonseed oil, linseed oil and soybean oil. Applied full-strength at 0.25-0.50 gallon/yd².

Organic petroleum products - Available as cutback asphalt, asphalt emulsions, modified asphalt emulsions and other emulsified oils. Application rates highly variable, depending on road surface conditions, product type and dilution.

Synthetic polymers - By-products of adhesive manufacturing process. Available as 40-50% volumetric residual concentrate (40-60 percent solids by mass) in water, then diluted for application.

Tackifier - A substance used with water to hold together mulches and other dust palliatives. A tackifier binds small particles together without forming a hard crust. Many dust palliatives can be used in a dilute form as a tackifier.

Topical - Liquid dust suppressant application technique using a hose, spray bay or spray cannon.

Windrow- Method of making a temporary road surface. A 4- to 6-inch thick layer of soil is scraped off the surface. The surface is treated with dust suppressant. The windrow is scraped back onto the surface and another treatment of dust suppressant is applied. A compaction step may be necessary.

ENVIRONMENTAL AND/OR REGULATORY REQUIREMENTS

Policy Background

The objective of this Interim Policy on Dust Palliative Use in the Pahrump Regional Planning District, Nye County, Nevada is to facilitate the implementation of fugitive dust controls in a manner that prevents human exposure to harmful constituents and protects soil and water resources while achieving Dust Control objectives. This interim policy was based on current state and federal regulations that are applicable to soil contamination, groundwater contamination, and surface water contamination. Some requirements are also incorporated based on information currently available in the scientific literature.

This policy document has been drafted to provide guidance on the use of dust palliatives and suppressants. The document lists applicable state regulations that may be applicable to the manufacture and application of dust palliatives. This interim policy includes guidelines and requirements for the use of dust palliative products based on conditions in the Pahrump Regional Planning District.

This policy document is intended to serve as an interim policy until permanent regulations can be developed based on more complete scientific data. It is envisioned that the permanent regulations will be more comprehensive in scope.

Regulatory Basis For Interim Guidance

- NAC 445A.2272 Contamination of soil: Establishment of action levels
- NAC 445A.22735 Contamination of groundwater: Establishment of action levels
- NAC 445A. 2275 Contamination of surface water
- NRS 444.8565 "Hazardous Waste" defined
- NRS 444.861 "Used Oil" defined
- NRS 444.8632 Compliance with federal regulations adopted by reference.
- NRS 444.8682 Requirements for managing and disposing of mixtures of used oil and hazardous waste or other products
- NRS 444.8683 Regulation of mixtures of used oil with wastes determined not to be hazardous
- NRS 444.8681 Mixing of used oil with hazardous waste or products

COMPLIANCE

Application of dust palliatives may be subject to sample collection and testing for compliance with applicable regulations of the Nevada Administrative Code and the Nevada Revised Statutes, and with the prohibited materials requirements and pH requirements set forth in this interim policy. Sample collection may be conducted by enforcement staff of the Nye County Nye County Planning Department or the Nevada Division of Environmental Protection.

The requirements of this policy are applicable to Dust Control Plans submitted under the requirements of the Dust Control Ordinances Section 15.28

Prohibited Materials

The materials and compounds listed on the following pages are not permitted in any dust suppressant product at detectable levels:

1) Banned Pesticides:²

- aldrin
- chlordane

² **References:** a) United States Environmental Protection Agency
Office of Pesticide Programs

<http://www.epa.gov/oppfead1/international/piclist.htm>

b) The Merck Index, eleventh edition, Merck and company, Rahway, N. J., 1989

c) Environmental Chemistry, Manahan, S. Lewis Publisher, 1994.

d) Hazardous Wastes, Watts, R. Wiley Interscience, 1997.

e) Hazardous Waste Management, La Grega, M. McGraw Hill, 1994.

- DDT
- DDE
- DDD
- Methoxychlor
- Dieldrin/endrin
- Heptachlor
- Hexachlorobenzene
- Lindane (γ -BHC)
- 4. 2,3,4,5-Bis(2-butylene)tetrahydro-2- furaldehyde (Repellent-11)
- bromoxynil butyrate
- cadmium compounds
- calcium arsenate
- carbon tetrachloride
- chloranil
- chlordecone (kepone)
- chlorinated camphene [Toxaphene]
- chloromethoxypropylmercuric acetate (CPMA)
- copper arsenate
- DBCP
- Di(phenylmercury)dodecenylsuccinate (PMDS)
- EPN
- ethyl hexyleneglycol (6-12)
- lead arsenate
- leptophos
- mevinphos
- mirex
- nitrofen (TOK)
- OMPA (octamethylpyrophosphoramidate)
- phenylmercury acetate (PMA)
- phenylmercuric oleate (PMO)
- potassium 2,4,5-trichlorophenate (2,4,5-TCP)
- pyriminil (Vacor)
- safrole
- silvex
- sodium arsenite
- TDE
- Terpene polychlorinates (Strobane)
- thallium sulfate
- vinyl chloride

2) **Severely Restricted Pesticides**³

- arsenic trioxide
- carbofuran (granular only)
- daminozide/alar
- sodium arsenate
- tributyltin compounds

3) **Dioxins**

4) **Asbestos**

5) **PCBs**

pH Limits

All dust suppressant products shall have a pH value of not less than four (pH = 4) or greater than nine (pH = 9) as applied.

GENERAL USE REQUIREMENTS

Open Bodies of Water and Drinking Water Well-Heads:

Organic petroleum products, deliquescent/hygroscopic salts, and lignin-based palliatives may not be used within 20 yards of open bodies of water, including lakes, streams, and canals, within 20 yards of a drinking water well-head. This buffer zone is intended to prevent leachate from these palliatives from reaching an open body of water or a ground water aquifer.

Natural Washes and Flood Control Channels:

Organic petroleum products, deliquescent/hygroscopic salts, and lignin-based palliatives may not be used within twenty 20 yards of any natural wash or flood control channel. This buffer zone is intended to prevent leachate from these palliatives from reaching a natural wash or flood channel, and subsequently being flushed into surface waters or drinking water supplies during a rain event

Surfactants:

³ **References: a) United States Environmental Protection Agency**

Office of Pesticide Programs

<http://www.epa.gov/oppfead1/international/piclist.htm>

b) The Merck Index, eleventh edition, Merck and company, Rahway, N. J., 1989

c) Environmental Chemistry, Manahan, S. Lewis Publisher, 1994.

d) Hazardous Wastes, Watts, R. Wiley Interscience, 1997.

e) Hazardous Waste Management, La Grega, M. McGraw Hill, 1994.

Surfactants may not contain phosphates. Surfactants by themselves are not allowed for use as a dust palliative because they do not form a durable soil surface. Non-phosphate surfactants may be combined with dust palliatives to assist penetration of dust palliatives into hydrophobic soils.

Pesticide Application With Dust Palliatives:

Any person who applies any pesticide material with a dust palliative is required to hold a valid pesticide applicators license issued by the State of Nevada.

Dust Palliative Dilution and Tank Cleaning:

Dust palliative applicators should be aware that use of water tainted with any of the above-listed prohibited or severely restricted chemicals, or with other compounds that would result in a violation of applicable codes and regulations for the dilution of dust palliatives could result in a palliative mixture that would not comply with applicable environmental regulations or the pH requirements for dust palliatives set forth in this policy.

Only potable water supplies or reclaimed water, meaning wastewater that, as a result of appropriate treatment, is suitable for subsequent beneficial use, may be used as a diluent for dust suppressants. Application or transport tanks that have been used for other purposes, such as pesticide use, must be cleaned in accordance with applicable regulations before being used to transport, mix, or apply a dust palliative.

Traffic Area Applications:

1. Fiber mulch products are not allowed for use as a dust palliative in traffic areas. These products do not hold up well for traffic use.
2. Non-phosphate surfactants may be combined with dust palliatives to assist penetration of into hydrophobic soils. Surfactants by themselves are not allowed for use as a dust palliative because they do not form a durable soil surface. Surfactants may not contain phosphates because phosphates adversely impact water quality.
3. Use of deliquescent/hygroscopic salts are limited to magnesium chloride and only allowed for short-term (less than one year) stabilization of unpaved roads. Treated unpaved roads must be periodically maintained with additional applications of water and magnesium chloride as needed to maintain effectiveness. Magnesium chloride is not effective, even with product reapplication, for periods of more than one year. Magnesium chloride may not be used on trafficked areas within 20 yards of an open body of water, a drinking water well-head, natural or artificial drainage channel, or other surface water feature.

TABLE 1
TRAFFIC AREA APPLICATION REQUIREMENTS

Appropriate Use of Liquid Dust Palliatives and Application Rates

(Traffic Area: Any land area upon which vehicular traffic is reasonably expected to occur due to location, topography or access)

Dust palliative materials must conform to all applicable Environmental / Regulatory Policies and General Use Requirements

Product Type	Use/Treatment	Dilution Ratio Range Typical	Application Rate gallon/yd ²	Notes
Synthetic polymers: polyvinyl acetate vinyl acrylic	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:12-1:4 1:9 1:12-1:4 1:9 1:12-1:4 1:9	0.50 0.50 0.25/0.25/0.50	1,2,3,4
Organic petroleum products: modified & unmodified asphalt emulsions	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:8 1:4 1:10 1:7 1:8 1:4	0.50 0.25 0.40	1,2,3,4,5 1,2,3,4,5 1,2,3,4,5
Magnesium chloride only. Other deliquescent/ hygroscopic salts, including calcium chloride and sodium chloride are not permitted	Topical Road or parking lot Topical Road shoulder-not Allowed Windrow Road surfaces		0.50 0.25/0.25	1,2,3,4,6,8,9 1,2,3,4,6,8,9, 10 1,2,3,4,6,8,9
Fibers/Mulches	Not Allowed Unpaved Road and other Traffic Applications	Not Applicable	Not Applicable	12
Lignin-Based Types (Lignosulfonate)	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:1 1:1 1:7-1:4 1:4 1:1 1:1	0.50 to 1.00 0.15 to 0.20 0.25/0.25 to 50/0.50	1,2,3,4,5 1,2,3,4,5 1,2,3,4,5
Organic non- petroleum products: animal fats, molasses/sugar beet, tall oil emulsions, vegetable oils	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:10 -1:2 1:5 1:10 -1:2 1:5 1:2- 1:1 1:1	1.00 1.00 0.15/0.15	1,2,3,4,5 1,2,3,4,5 1,2,3,4,5
Other	As approved by Control Officer			

Non-Traffic Area Applications:

1. Organic petroleum products, including modified and unmodified asphalt emulsions, are not permitted on non-traffic areas. These palliatives are subject to NAC 445A.2272(b) and may discolor the land surface and produce unpleasant odors.
2. Deliquescent/hygroscopic salts are not allowed for non-traffic stabilization. These salts require frequent re-watering to be effective in the Las Vegas Valley, are not effective for periods of more than one year, and tend to leach chlorides when precipitation occurs.
3. Lignin-based palliatives are not allowed for non-traffic stabilization. Surface binding action of lignin-based palliatives may be reduced or completely destroyed when heavy rains occur. The decreased binding action of these products following heavy rains renders areas treated with lignin-based palliatives vulnerable to wind erosion after rain occurs. Leachate from lignin-based palliatives may also adversely impact the quality of storm water runoff.
4. Non-phosphate surfactants may be combined with dust palliatives to assist penetration of into hydrophobic soils. Surfactants by themselves are not allowed for use as a dust palliative because they do not form a durable soil surface. Surfactants may not contain phosphates because phosphates adversely impact water quality.

TABLE 2
NON-TRAFFIC AREA APPLICATION REQUIREMENTS
Appropriate Use of Liquid Dust Palliatives and Application Rates

(Non-Traffic Area: Any land area upon which no vehicular traffic is reasonably expected to occur due to site specific conditions; e.g., remoteness, fencing or other access controls)

**Dust palliative materials must conform to all applicable Environmental /
Regulatory Requirements and General Use Requirements.**

Product Type	Use/Treatment	Dilution Ratio Range Typical	Application Rate gallon/yd ²	Notes
Synthetic polymers: Polyvinyl acetate Vinyl acrylic	Topical Vacant Land	1:12-1:4 1:9	0.50	1,2,3,4
Organic petroleum products: modified & unmodified Asphalt emulsions	Not Allowed Vacant Land	Not Applicable	Not Applicable	10
Deliquescent/ Hygroscopic salts: Magnesium chloride Brine, calcium chloride brine or flakes, sodium chloride	Not Allowed Vacant Land	Not Applicable	Not Applicable	10
Lignin-Based Types (Lignosulfonate)	Not Allowed Vacant Land	Not Applicable	Not Applicable	10
Fibers/Mulches	Topical Vacant Land	As prepared	500-6000	1,2,3,4,11
Organic non- petroleum products: animal fats, molasses/sugar beet, tall oil emulsions, vegetable oils	Topical Vacant Land	1:10-1:2 1:5	1.00	1,2,3,4,5
Other	As approved by Control Officer			

NOTES: (See last column in preceding Application Guideline tables)

1. Topical application rates shown are to obtain ½ to 1 inch of penetration. Higher application rates should be used if greater penetration is needed. Windrow rate shown is to give sufficient penetration to from a 4-6 inch thick temporary travel surface.
2. The dilution ratio (concentrate: water) is variable, and shall be appropriate for the intended use, and local soil and weather conditions, as proposed by the Contractor and agreed upon by the Control Officer. Warranty conditions in Note 4 apply.
3. Application rate of mixed solution at the typical dilution ratio. Lifetime conditions in Note 4 apply. For windrow applications, the rates separated by slash marks indicate the first/second/third application. First application is after removal of windrow. Second application is after replacement of windrow. Third application, if needed, is after second application.
4. Application of diluted suppressant shall be sufficient to achieve a minimum warranted lifetime of one year from date of application.
5. These palliatives are subject to NAC 445A.2272(b) and may discolor the land surface and produce unpleasant odors.
6. Must be periodically maintained with additional applications of water and salt as needed to maintain effectiveness. Allowed only for short-term (< one year) stabilization of unpaved roads. May not be used on trafficked areas within 20 yards of a drinking water well-head, natural or artificial drainage channel or other surface water feature unless approved by the Control Officer.
7. Surfactants may be added to assist penetration of water and dust palliative into hydrophobic soils. Surfactants by themselves are not allowed for use as dust palliatives. Phosphates not allowed as surfactant constituents.
8. Brine strength may vary as supplied from manufacturer, but is typically in the range of 20-40 percent solids by mass. Maximum and minimum allowable strengths to be set by the Control Officer.
9. Sodium chloride (NaCl) not allowed for any application, because it is ineffective at ambient relative humidity below 76 percent. Relative humidity above 50 percent seldom occurs in the Las Vegas Valley.
10. Deliquescent/hygroscopic salts are not allowed for use on vacant lands or on road shoulders near surface waters or surface drainage because of adverse water quality impacts, including elevated chloride concentrations in storm water runoff and in groundwater.
11. Application rate in pounds per acre at the on-site blended strength.
12. Fiber mulches are not effective for traffic applications.

ATTACHMENT 3

DESIGN AND POSTING OF DUST CONTROL PLAN SIGNAGE

POLICY ON DUST CONTROL PLAN DESIGN AND POSTING OF SIGNAGE

Pursuant to Subsection 15.28.110 of the Dust Control Ordinances, the Nye County Planning Department of has developed this policy to address questions related to the posting of informational signs on construction sites in the Pahrump Regional Planning District, Nye County, Nevada. Since this policy is referenced in the ordinances, non-compliance may result in a Notice of Violation.

The following text is excerpted from subsection 15.28.110 for purposes of convenience:

The owner/operator will:

Install a sign on said property prior to commencing construction activity that is visible to the public and conforming to County policy on Dust Control Permit Design and Posting of Signage listed in Attachment 3 of the Dust Control Handbook.

In addition to the requirements listed pursuant to subsection 15.28.110, the Dust Control Plan sign shall conform to the following requirements:

- 1. The signboard shall be constructed with materials capable of withstanding the harsh environment (e.g., strong winds, intense sunlight) of Nye County.**
 - (a) Nye County recommends the following materials:
 - (i) $\frac{3}{4}$ " A/C laminated plywood board 2 feet by 2 feet in dimension;
 - (ii) 4"x4" posts;
 - (iii) Posts should be attached to the plywood board with a minimum of two (2) carriage bolts on each post; and
 - (iv) The front surface of the signboard should be painted in the contrasting colors of a white background with black lettering.
- 2. The sign board shall contain the following information:**
 - (a) Project name;
 - (b) Owner/Operator name;
 - (c) Telephone Number of person responsible for dust control;
 - (d) Nye County Planning Department telephone number;

- (e) Building, site preparation, or conditional use permit number;
- (f) Project Acreage; and
- (g) Building, site preparation, or conditional use permit expiration date.

4. The signboard shall be designed to the following alpha and numeric text dimensions (sign boards written in longhand are unacceptable).

(a) Nye County provides the following example:

PROJECT NAME:	(Proj. Name)
OPERATOR:	(Your Name)
OPERATOR TELEPHONE NUMBER:	(Your Number)
NYE COUNTY— PLANNING DEPARTMENT TELEPHONE NUMBER:	(775) 751-4033
BUILDING/OTHER PERMIT NUMBERS:	(Permit Number)
DUST CONTROL PLAN NUMBER	(Plan Number)
PROJECT ACREAGE:	(Acreage)