Summary of Discussion of a WRAP Definition of Dust And Policy for Categorizing Dust Emissions, As Discussed at the DEJF Meeting on February 25, 2004

DRAFT DEFINITION OF DUST: Particulate matter that is or can be suspended into the atmosphere as a result of mechanical, explosive, or wind-blown suspension of geologic, organic, or synthetic solids or disolved solids. Dust does not include non-geologic particulate matter emitted directly by internal or external combustion processes, but does include resuspension of secondary particulate matter.

DRAFT DEFINITION OF FUGITIVE DUST: Dust that does not enter the atmosphere through a vent, duct, stack, or tailpipe.

NATRUAL vs. ANTHROPOGENIC SOURCES OF DUST: The purposes for distinguishing anthropogenic from natural sources are to:

- Further clarify what the WRAP means by dust, its sources, and causes;
- Provide an operational definition for use in observational- and emissions-based source apportionment techniques;
- Identify and prioritize sources of dust that are most appropriate to control; and
- Identify sources and quantities of dust that would probably occur naturally and that should not be expected to be mitigated, although this could be feasible and desireable under some circumstances.

The definitions of dust in this document and the distinctions made between natural and anthropogenic sources are not intended for use in refining the EPA's estimates of natural conditions, although these definitions and distinctions may be a useful starting point in any such process. Moreover, the distinction between natural and anthropogenic dust applies equally to sources of dust outside the United States. Hence, both natural and anthropogenic sources of dust may reach the U.S. from other countries.

Dust from natural and anthropogenic sources will often be indistinguishable and may occur simultaneously. For example, natural, barren areas will naturally emit some dust during high wind events, but will emit more when disturbed by human activities. Hence, the dust from a disturbed, naturally-barren area on a given day will be part "natural" and part "anthropogenic". The same holds true for croplands and other land types.

Examples of anthropogenic and natural sources of dust are provided below. Any mitigation of dust for regional haze purposes would likely be geared towards those anthropogenic sources that are most likely to contribute to visibility impairment in Class I areas and that are technically feasible and cost-effective to control. Sources that are already controlled may be technically infeasible or not cost-effective to control further.

Definition and Examples of Anthropogenic and Natural Dust

Anthropogenic Dust	Natural Dust
All mechanically- and explosively-suspended solids and disolved solids from activities including but not limited to: • Construction, mining, and demolition • Material handling, processing, and transport • Agricultural tilling, irrigation, and crop treatment • Vehicular movement on paved and unpaved surfaces • Animal movement on surfaces disturbed or altered by humans beyond a natural range for recreational or mass production, consumption, or transportation purposes (confined animal feeding operations, herding on over-grazed lands, etc.)	• Animal movement on lands not disturbed or altered by humans beyond a natural range for recreational or mass production, consumption, or transportation purposes • Natural landslides, rockslides, and avalanches • All solids and disolved solids emitted by volcanoes, geysers, waterfalls, rapids, and other types of splashing • All extraterreistrial material and impacts
The amount of solids and disolved solids entrained by wind passing over surfaces disturbed or altered by humans beyond a natural range for recreational or mass production, consumption, or transportation purposes <u>in excess</u> of what would be entrained without such disturbance or alteration. Such surfaces may include, but are not limted to: • All natural lands (disturbed sand dunes, lake beds, etc.) • Construction and mining sites • Material storage piles, landfills, and vacant lots • Roadways and parking lots • Artificially-exposed beds of natural lakes and rivers • Artificial water bodies • Agricultural crop, range, and forest lands • Areas burned by anthropogenic fires (as defined by the WRAP Policy for Categorizing Fire Emissions) which have yet to be revegetated or stabilized	All solids and disolved solids entrained by wind passing over surfaces <u>not</u> disturbed or altered by humans beyond a natural range for recreational or mass production, consumption, or transportation purposes. Such surfaces may include, but are not limited to: • Naturally-dry river and lake beds • Barren lands • Exposed rock • Sand dunes • Natural water bodies (e.g., sea and lake spray) • Non-agricultural grass, range, and forest lands • Agricultural crop, range, and forest lands • Areas burned by natural fires (as defined by the WRAP Policy for Categorizing Fire Emissions) which have yet to be revegetated or stabilized
Wind-blown particulate matter from sources created by natural events over two years ago, similar to EPA's natural events policy	