Identifying Locations and Conditions that Produce Windblown Dust

Listed below are specific locations and conditions that have the greatest potential of producing windblown dust. Focusing efforts on controlling and monitoring these areas will have the greatest impact in reducing windblown dust emissions.

- **Bare, unvegetated surfaces.** Open areas with little or no natural cover from rocks and vegetation are primary sources of windblown dust. Widely separated vegetation has more potential for dust emissions than more continuous vegetation.

- **Smooth surfaces.** Smooth areas lack the sheltering effect of rocks and vegetation and thus are subject to the full energy of surface winds.

- **Long fetch.** The longer the stretch of open land parallel to the wind (washes, river beds, desert "streets"), the greater the potential for windblown dust.

- **Disturbed soils.** Soils disturbed by mechanical activities (vehicles, motorcycles, ATVs, industrial and construction equipment) emit at rates far higher than undisturbed soils under the same wind speeds.

Bare, smooth and disturbed surface

- **Thick deposits of soils.** Most soils emit the majority of windblown dust during the initial minutes of a high-wind event. Areas that have a large supply or reservoir (loose soils without a crust, heavily disturbed areas) can continue to emit for as long as high winds persist.

- **Soil composition.** Any dry, desert soil has the potential to emit windblown dust. However, the texture of a soil may affect its ability to produce windblown dust according to these general principles: Sandy soils tend to emit because these soils are less likely to produce crusts. Soils high in silt and clay content can emit heavily if their natural crust has been disturbed.

- **Soil moisture.** As soils dry out, their ability to aggregate and form crusts is hampered.

- **Topography that converges winds.** Areas that can funnel winds like riverbeds, washes and other low-lying areas.

Adapted from: *A Qualitative Geophysical Explanation for "Hot Spot" Dust Emitting Regions*, Dale A. Gillette, Contributions to Atmospheric Physics, February 1999