PUBLIC MEETING PRESENTATION

# Air Monitoring of Prescribed Burn: A Study of Soil Resuspension

- A prescribed burn is planned this year.
- This presents an opportunity to collect valuable information related to potential air quality impacts from wind-blown dust.
- Study will examine aspects of airborne soil both during and following a fire similar to that which might occur at Rocky Flats after closure.

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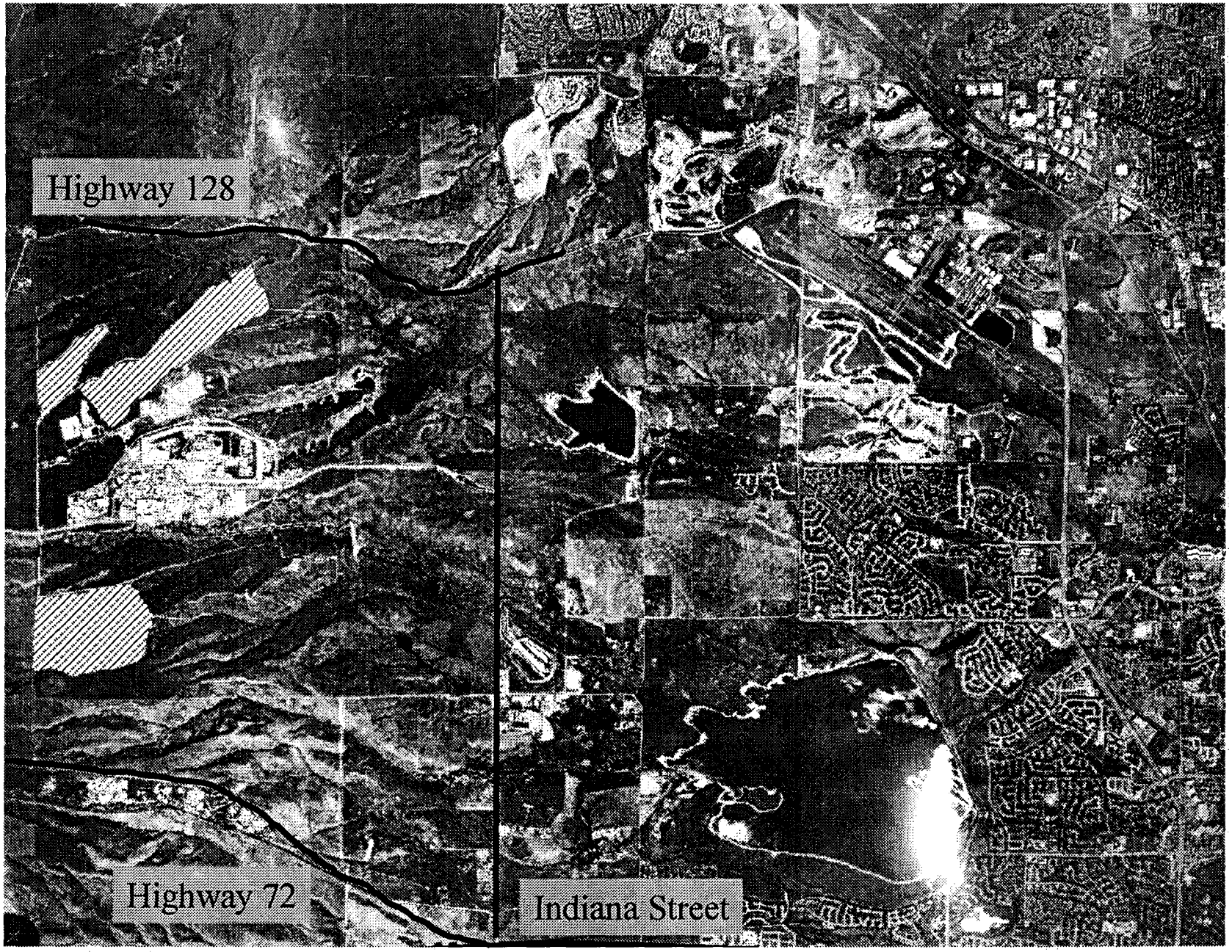






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# Overview of Study Design

<u>Three study aspects proposed</u>:

- Aspect 1 -- monitor the air during the burn, measuring radionuclide content for purpose of estimating any potential exposure.
- Aspect 2 -- monitor the plume to characterize any soil content that may become airborne due to the fire or its consequences.
- Aspect 3 -- quantify soil resuspension rates both before the burn and following.

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# Aspect 1 -- Exposure Monitoring

- Upwind/downwind high volume samplers; downwind sampler close to the burn area.
- Continuous sampling during the entire burn.
- Screen filters for $\alpha/\beta$, do isotopics if downwind results are measurably greater than upwind results.
- Reduce data to obtain average concentration available for inhalation.
- Perimeter ambient RAAMP samplers: filters exchanged and analyzed for the burn period.

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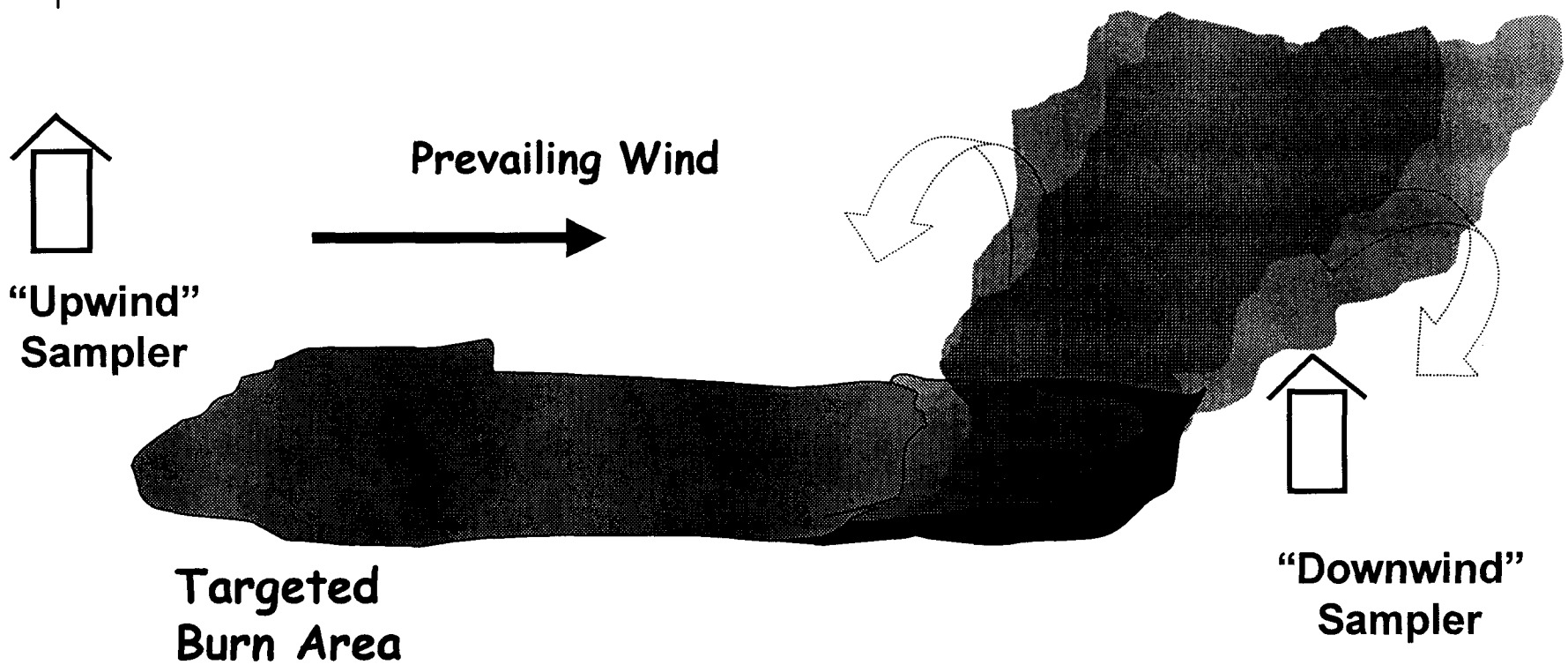
# Conceptual Configuration
# Aspect 1 - Upwind/Downwind Sampling




***plus Perimeter Sampling***

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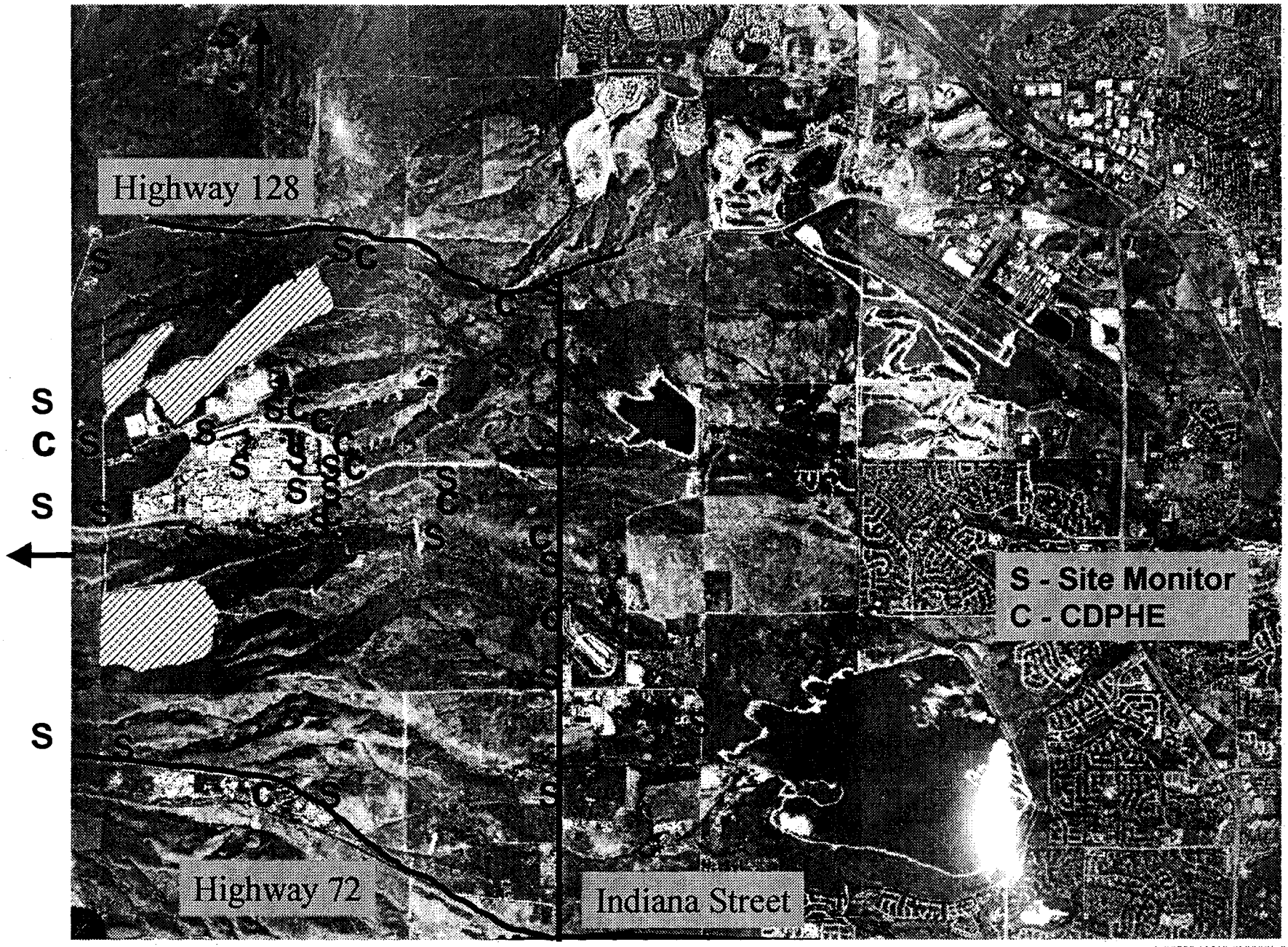






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# Aspect 2: Plume's Soil Content

- Upwind/in-plume low-volume samplers
- Upwind sampling continuously.
- In-plume sampling during plume exposure.
- Two filter media in parallel - for mass, carbon and elemental analysis, radionuclides.
- Data to be used to characterize elemental content of samples associated with soil material, detect soil resuspended by burn.

# Aspect 3: Soil Resuspension Study

- Pre- and post-burn sampling from the exposed ground.
- Sampling to be performed using portable wind-tunnel (as performed in OU-3).
- Multiple traverses sampled at each location.
- Post-burn sampling several times during recovery period.
- Sampling for airborne mass, size distributed mass, carbonaceous material, (radionuclides, if detected in Phase 1 or 2).

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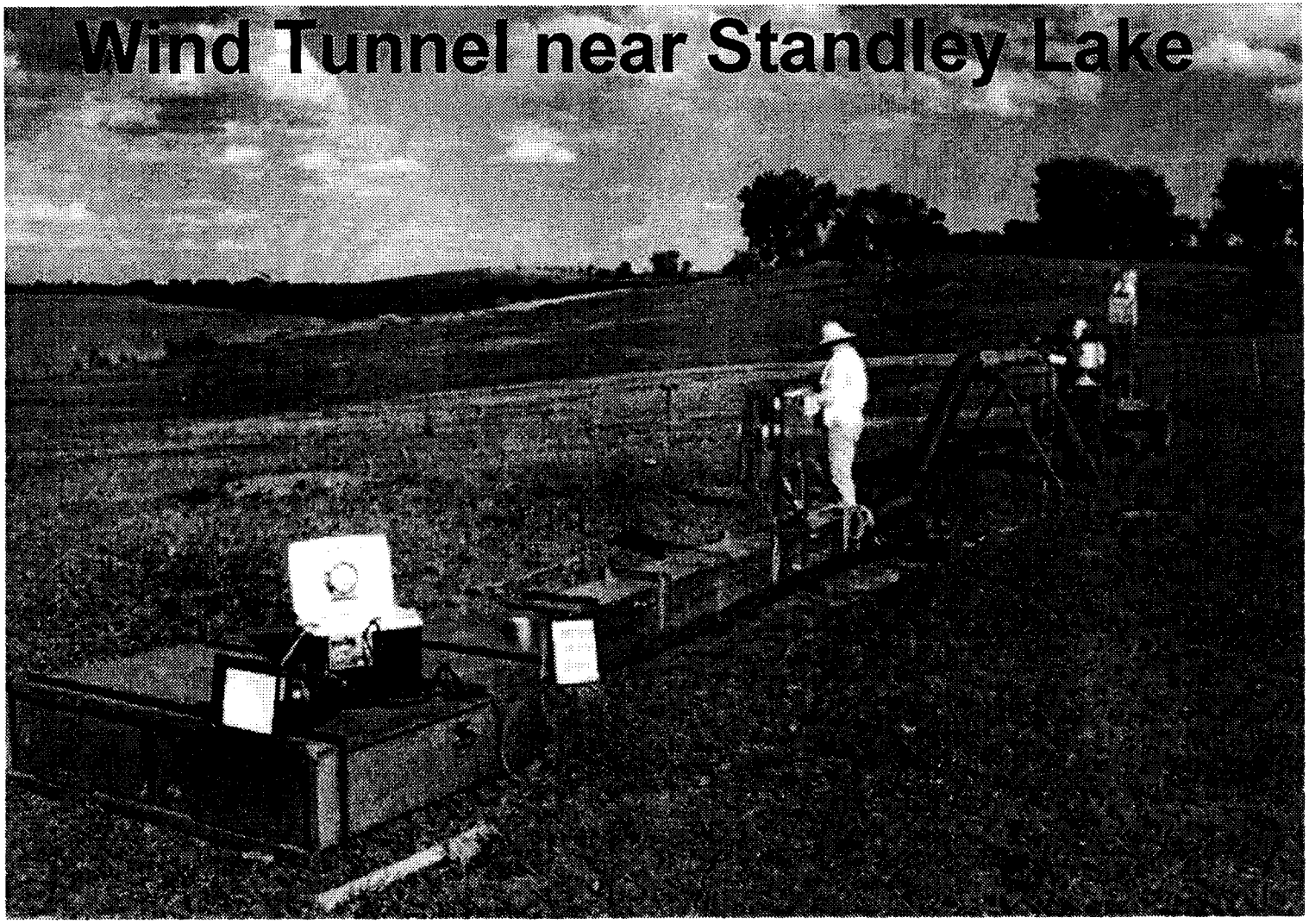
# Wind Tunnel near Standley Lake



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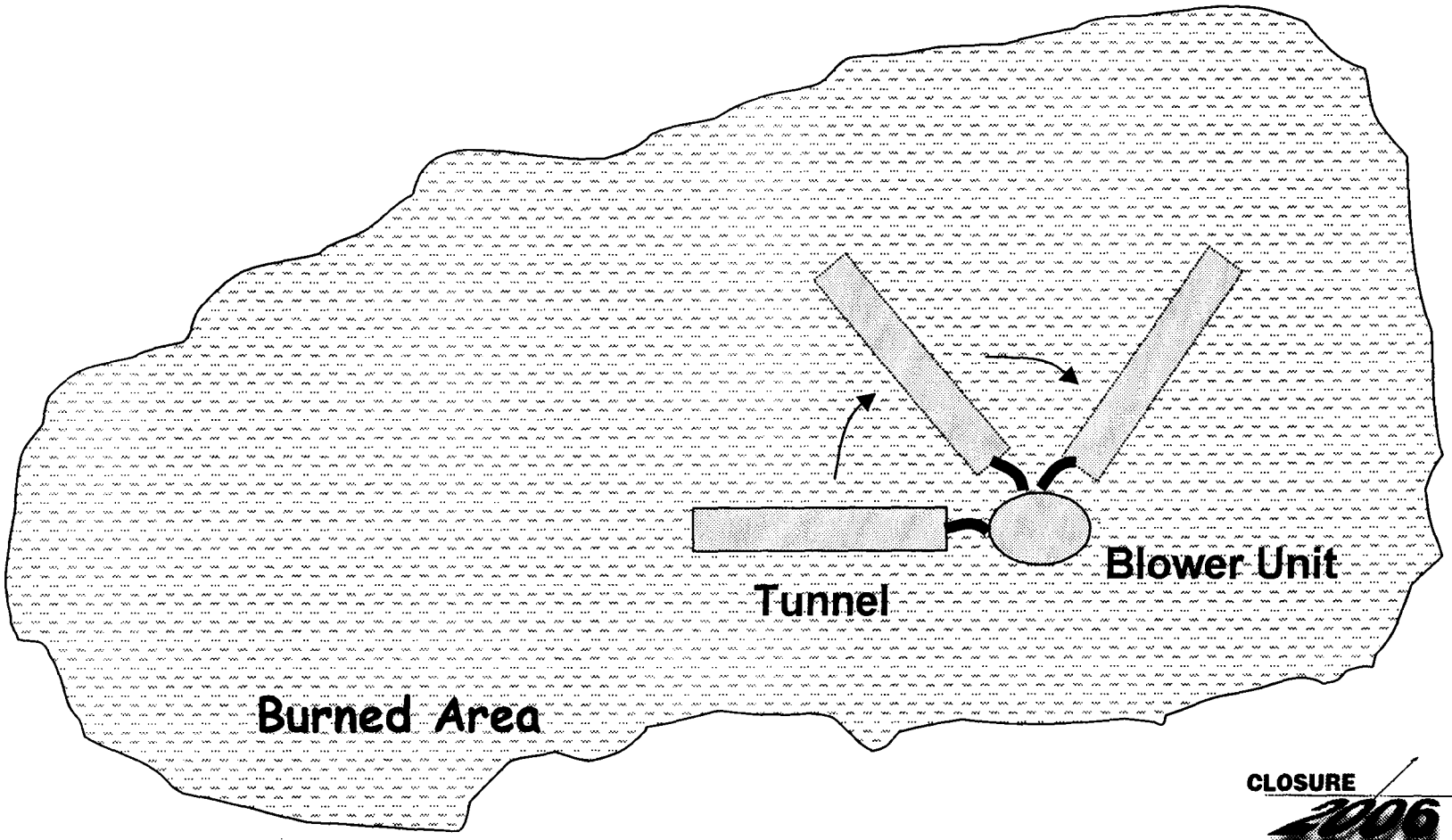
# Conceptual Configuration
# Aspect 3 - Wind Tunnel Tests

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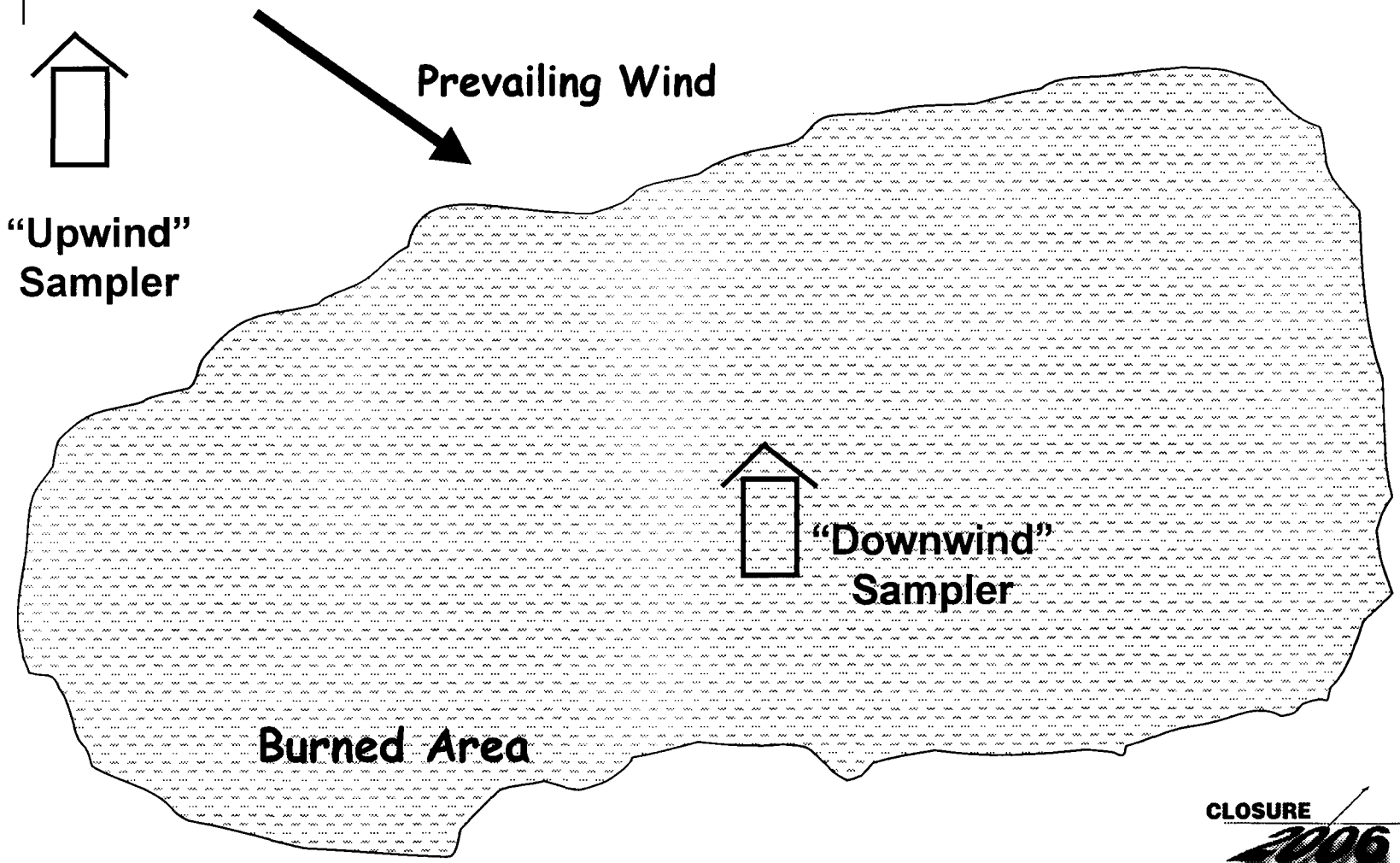
# Aspect 3: Soil Resuspension Study (continued)

- Data will be correlated with wind speed to estimate resuspension wind-speed thresholds and resuspension coefficients associated with various field conditions from "pristine" to "burned" to "recovered".
- In addition, continuous monitors will be operated "upwind" and "downwind" of the study area, long-term, to determine mass-based air quality impacts consequent to the burn.

# Conceptual Configuration
# Aspect 3 - Long-Term Continuous Sampling



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