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TO: Mark Stover, Chief
Stationary Source Enforcement Branch
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THRU: Kenneth R. Stroud, Chief
Air Quality Surveillance Branch
Monitoring and Laboratory Division

FROM: Mac McDougall, Manager
Special Purpose Monitoring Section
Monitoring and Laboratory Division

DATE: September 17, 2009

SUBJECT: LOYALTON MONITORING RESULTS

Attached are two laboratory reports summarizing analyses of samples collected at your request in Loyalton, California. These samples were collected as described in our *Sampling Protocol for Loyalton Ambient Air Monitoring Plan* (attached) and included;

- 1) Glass Petri dish deposition sampling (for metals, common ions, and carbon),
- 2) Scanning Electron Microscope (SEM) Stub sampling.
- 3) University of North Carolina (UNC) passive aerosol sampling, and,
- 4) Modified University of North Carolina (UNC) passive aerosol sampling.

Also attached are photos and maps of our sampling location.

The original complaints reported the presence of a “sticky, black gooey substance” which was depositing on outdoor surfaces. Given the nature of the complaint, passive air monitoring and qualitative analysis techniques were utilized.

Ambient air sampling was conducted between March 10, 2009 and May 28, 2009 and was located at the Human Services Building, 202 Front Street, Loyalton, California. Sampling media were placed on a stand approximately two meters above the roof line.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

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In addition to air sampling, Monitoring and Laboratory Division staff obtained a sample of bottom ash (non-combustible fuel leftover material) from the nearby Sierra Pacific Industries facility. This bottom ash sample was analyzed by scanning electron microscopy (SEM) and energy-dispersive spectroscopy (EDS) as were the SEM Stub, UNC, and modified UNC air samples.

Qualitative analyses of glass Petri dish deposition sampling results are attached.

SEM Stub, UNC, and modified UNC sampling, in addition to SEM/EDS analysis of the bottom ash sampling, yielded two key findings: first, that chemical and morphological similarities exist between particles in the bottom ash sample and the particles collected on the SEM Stub, UNC and modified UNC samples, and; that the absence of soot particles and predominance of fly ash on the SEM Stub, UNC and modified UNC samples indicate that the particulate matter was subjected to high temperature combustion, contrary to emissions from residential stoves and fireplaces. (See attached report, *Analysis of Particulate Matter collected in Loyalton, California, March – April 2009*, for more detailed discussion and presentation of data.)

Attachment

cc: William V. Loscutoff
Monitoring and Laboratory Division

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