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## **Air Quality at Roseville Rail Yard Poses Cancer Risk**

*Recent Study by Health Effects Task Force Also Outlines Multiple Solutions*

**ROSEVILLE, Calif., November 28, 2007** – A recent study on emissions from the Union Pacific Roseville Rail Yard reveals diesel exhaust from the site is approximately 5.5 times richer in carcinogenic components, including benzo[a]pyrene, than exhaust from diesel trucks.

However, there are solutions immediately available to combat the potentially harmful effects of diesel emissions from the site that can greatly reduce health impacts from particulate pollution, according to the study, which was issued by the Health Effects Task Force (HETF) of Breathe California of Sacramento-Emigrant Trails.

The identified solutions range from simply planting vegetation barriers that can act as filters to exploring alternative fuels and further developing “hoods” for locomotives that capture and scrub exhaust. The point, air quality experts say, is that while train engine exhaust hurts air quality, the community and Union Pacific are far from helpless when it comes to applying solutions.

“These studies have given us the most detailed picture of particles coming off a rail yard that has ever been achieved. There were a number of unexpected findings, including higher than expected levels of heavier polycyclic aromatic hydrocarbons and metal contaminated soils,” Professor Thomas A. Cahill of the University of California, Davis said. “However, these studies have also shown specific ways these aerosols can be reduced that go beyond the current mitigations that are part of the Memorandum of Understanding between the Union Pacific Roseville Rail Yard (UPRR) and the regulatory agencies.”

The report shows exhaust from diesel locomotive engines at the rail yard differs from exhaust from truck diesel engines in particle size, concentration of toxics per unit mass, and molecular weight. Emissions from idling engines in the rail yard are approximately three times larger in size than emissions from a diesel truck engine under load, somewhat reducing their lung capture. However, the toxic concentrations are about twice as great per unit mass as in diesel trucks, and they are also 3 times heavier in molecular weight, increasing their toxicity.

Further compounding the air quality issue at the rail yard is soil contamination. High levels of lead and other heavy metals not common to the area were found in the soils as well.

These contaminants also affect air quality because they are re-suspended into the air as dust by vehicle traffic and can also affect residents downwind of the site. Researchers believe the high concentration of contaminants is most likely the result of decades of paint and shop waste collecting in the soil.

In addition to these findings, the report also outlines a number of effective mitigation efforts to reduce health risks to residents downwind of the rail yard. This process has already started with the MOU between the UPRR, Placer County APCD and other local, state and federal air pollution agencies. In addition to the current efforts, the study highlights four main mitigation categories, which include:

- Mitigation of the diesel sources through a variety of methods, including upgrading engines to the highest level of Verified Diesel Emission Control Systems commercially available; making modifications to yard operations to reduce engine idling; engaging in future tests with hood systems that capture and treat exhaust; and using alternative fuels along with other options;
- Physical changes to the rail yard in the form of adding vegetation barriers and paving frequently traveled areas. Ongoing HETF studies show that vegetation barriers are very efficient at removing particulate air pollution. The planting of vegetation barriers aligned with the tracks and at boundary fences can help reduce pollutants from traveling downwind and also enhance soil stabilization, which further prevents re-suspension of contaminated dust. Additionally, paving areas of the rail yard frequently traveled by vehicles also helps reduce the rate of re-suspension of contaminated soils in the form of dust;
- Use of indoor filtration systems. A recent study at Arden Middle School showed simple passive electrostatic indoor filters to be surprisingly effective in filtering particulate pollution. Utilization of newer electrostatic filters have shown to reduce indoor particulate pollution by as much as 75 percent; and
- Reinforcing the importance of distance between poor air quality producers and individuals downwind. Ultimately the best possible solution for individuals downwind of poor air quality is distance. However, the combination of vegetative barriers and distance is even more effective.

Led by a father and son team, Thomas A. Cahill of UC Davis and Thomas M. Cahill of Arizona State University, the study results and recommended mitigation strategies further support air quality studies and innovations to reduce the risk from particulate pollution.

The HETF is composed of a group of ten air quality and health experts who have for the last 13 years volunteered their skills and expertise for Breathe California of Sacramento-Emigrant Trails. Other notable studies include identifying the effect of fine particles on ischemic heart disease in the Central Valley in 1998.

Several agencies provided data in support of the HETF research effort. These include the Roseville Rail yard Aerosol Monitoring Project, the Environmental Protection Agency Region IX and the University of California, Davis through Dr. Cahill and the Delta Group

Breathe California of Sacramento-Emigrant Trails leads a wide variety of efforts and programs to promote clean air and healthy lungs. Originally founded in 1917, the organization that is today Breathe California of Sacramento-Emigrant Trails is an independent non-profit that spends 100 percent of every dollar raised or donated in its home community to improve the health of our region's residents. For more information, call (916) 444-5900, or visit [www.sacbreathe.org](http://www.sacbreathe.org).

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