UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS RESEARCH LABORATORY
HUMAN STUDIES DIVISION/EPIDEMIOLOGY & BIOMARKERS BRANCH
Research Triangle Park, NC 27711

OFFICE OF
RESEARCH AND DEVELOPMENT

MEMORANDUM

DATE: June 18, 2004

SUBJECT: Request for EPA approval of a protocol "Physiological changes in adults with metabolic syndrome exposed to concentrated ultrafine Chapel Hill air particles."

FROM: Don Graff, Principal Investigator

THRU: Rebecca Calderon, Acting Director for the Human Studies Division
William McDonnell, Acting Director, NHEERL Human Research Protocol Office

TO: Hal Zenick, Associate Director for Health

Enclosed is the protocol package for EPA review and approval for a controlled human exposure study of people with "metabolic syndrome" (i.e. overweight, high blood pressure, high cholesterol, high blood lipids, but no clinical indication of cardiovascular disease) to concentrated ambient air particles. The enclosed package includes the following:

NHEERL Human Research Sign-off Sheet
Study Justification Document
NHEERL Fact Sheet
UNC IRB approval letter
Study protocol (in UNC IRB format)
Approved consent forms
Approved advertising and telephone script
Exposure dose calculations
Power calculation summary
Statistical analysis plan from biostatistician Dr. Paul Stewart
Human subjects research education certificates
Peer reviewer comments by Mark Frampton and our response
Peer reviewer comments by Robert Brooke and our response

Sent to Hal via Rebecca 6/22/04

The study is a part of a collaborative research program between the Human Studies Division and the University of North Carolina's Center for Environmental Medicine, Asthma, and Lung Biology (CEMALB). This study is designed to determine whether people who have risk factors for developing diabetes already show evidence of enhanced sensitivity to PM as measured by changes in the response of the peripheral vasculature. Since these changes usually begin with the endothelial cells that line the blood vessels, this study will characterize PM-induced changes in endothelial cell dysfunction by using ultrasound to measure changes in brachial artery diameter