Technical Charge to Peer Reviewers of the Draft Exposure Assessment Section of the Approach for Estimating Changes in Blood Lead Levels from Wheel Weights

Background

EPA has developed a draft exposure assessment to be used in evaluating options to address the potential risks posed by lead wheel weights. These wheel weights can be lost from cars and can enter the environment, leading to potential exposures to children and adults who inhale or ingest roadway particles containing wheel weight lead or who drink contaminated water. In addition, wheel weights may be collected by home hobbyists and melted for use in making bullets, fish sinkers, or other hobby items. Although resultant blood level levels were estimated based on the exposure assessment, it is the exposure assessment **only** that is the subject of the peer review.

Scope

The document titled*: "Approach for Estimating Changes in Blood Lead Levels from Wheel Weights"* was developed as a support document for EPA regulatory efforts on lead wheel weights. Information on health hazards, fate, home hobbyist exposure, and the use of the IEUBK model and Adult Lead Model (ALM) are beyond the scope of this peer review as these topics have either already peer reviewed or are not key to the cost-benefit analysis. The entire document is provided to the peer reviewers to provide context and understanding of the use of the exposure assessment in this case. **The charge to the peer reviewers is to evaluate the methodologies used to estimate exposure to near roadway exposures as detailed in Sections 1 and 4 of the draft exposure assessment document <u>only</u>. Specifically, EPA requests responses to the Charge Questions below.**

Charge Question 1: Approach for Near Roadway Scenario.

OPPT has developed a near roadway exposure assessment scenario which outlines the method used to estimate the lead exposure of children and adults living near generic roadways where lead wheel weights have abraded. Chapters 1 and 4 of the *"Approach for Estimating Changes in Blood Lead Levels from Wheel Weights"* document provides an overview of the methodology as well as details about the parameter selection.

Question. Please comment on the overall approach for the near roadway scenario. Are the modules, default scenarios and assumptions reasonable and adequately supported by relevant scientific data? If not, specifically note why assumptions are unreasonable and provide suggestions and references to support alternate default assumptions.

Charge Question 2: Vehicular Wheel Weight Loss Rates and Abrasion Rates.

In order to estimate lead emission rates from a roadway associated with lead wheel weights, the loss rates from vehicles and the wheel weight abrasion rates are needed. A literature search returned a single published study (Root, 2000) that quantified the wheel weight loss rates and abrasion rates. This study has limitations as described in the report. The effect of these limitations is explored in the exposure assessment by varying certain key aspects and assumptions and comparing the values against a base case.

Question. Please comment on the use of the Root (2000) study to determine the wheel weight throw rates and abrasion. Are the data from the Root (2000) study reasonably used and adequately transparent? If not, specifically note how the data should be used and provide suggestions and references for alternative data usage or sources.

Charge Question 3: Estimation of Lead Dust Generation from Roads

In order to estimate the lead dust generated from the roadway, a steady-state mass balance model was developed which took into account the amount of lead lost from vehicles, the amount of lead abraded into dust and the removal of lead wheel weights by street cleaning. The applicable model inputs were set using data from the literature when available. When data were not available or of low quality or quantity, the model results were evaluated using alternative lower or higher input values.

Question. Please comment on the approach for estimating lead dust emissions generation from the roadway. Is the approach for estimating lead dust emissions reasonable and supported by available information? If not, specifically note how the data should be used and provide suggestions and references for alternate data usage or sources.