December 8, 2000

Attn: Mr. Charles Root (3HS21)
Remedial Project Manager
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103

Subject: Various issues related to the current status and future direction of the Palmerton Zinc Superfund Site.

Dear Mr. Root:

As a follow-up to our October 19, 2000 meeting at Palmerton Borough Hall, the purpose of this correspondence is to formally memorialize several important positions the PCCE has regarding evaluation and remediation of the Palmerton Zinc Superfund Site. First, we would like to thank you and Eugene Dennis for taking time out of your busy schedules to attend our October 19th General Membership meeting. We believe it is important for EPA to address the PCCE Membership about issues related to the Palmerton Zinc Superfund Site on a regular basis in order to develop and maintain a sincere and substantive public involvement process. Consistent with our role as recipients of EPA's Technical Assistance Grant for Superfund sites, we continue to serve the Palmerton community by reviewing and interpreting reports relevant to the site, publishing reports of our reviews for the benefit of EPA and the community at large, and addressing EPA with comments which we believe are of importance to the community.

The delineation of operable units (OU's) at the Palmerton Zinc Superfund Site is inconsistent in that OU#1 (Blue Mountain) and OU#2 (the Cinder Bank) are defined geographically, while OU#3 (titled "Community Soils", but actually involving all risks to human health within those residential communities affected by contamination from the zinc industry), and OU#4 (which involves groundwater, surface water and the assessment of ecological risk), appear to be defined by the media contaminated, or the type of risk being evaluated. It is our understanding that all operable units should be defined geographically, and that all operable units should be thoroughly evaluated for risks to human and ecological health. Further, it is our understanding that environmental quality and ecological integrity are directly related to human health and welfare. Consequently, we must insist that EPA not issue a Record of Decision for OU#3 until it has completed, and the PCCE has had the opportunity to review and comment on, the ecological risk assessment. We expect that the ecological risk assessment will include the entire area which has been impacted by industrial contamination, including Blue Mountain, Stony Ridge, the Cinder Bank, Aquashicola Creek and Lehigh River, the groundwater, the west plant facility, the east plant facility, and the residential communities within the Palmerton Valley. We expect to see a complete evaluation of community structure and the functional integrity of ecological cycles.

During the course of the Superfund Symposium, two voices in particular seemed to speak with unusual confidence and conclusiveness about a study that was previously unknown to most of us. The Hazardous Substances Source Identification Study unveiled and described by Dr. Michael Ketterer, Assistant Professor of Chemistry at John Carroll University in Cleveland Ohio, and Dr. Joseph Lowry, Senior Science Advisor of EPA's National Enforcement Investigation Center, was clearly a complex and multi-faceted study. The conclusions it reached were consistent with our experiences about the nature and extent of historical contamination as well as the frequency of emission incidents that occurred at the current operations facility. We found their statements about the inadequacy of air monitoring facilities to be consistent with our own observations and concerns, and the high degree of statistical correlation between the three analytical methods employed convincing. Their statement that some of the highest concentrations of metals is found in partially decomposed organic matter made sense, since this material has the physical attributes of soil, yet fails to support any vegetation.

Our Technical Advisors reviewed the NEIC study, and while they found a few errors, generally concluded that the study was important for defining both the extent and source of contamination in Palmerton. Predictably, the industry issued their critique of the NEIC study, and claimed it was inaccurate and reached the wrong conclusions. We reviewed the industry's critique, and while it is impossible for us to positively verify or refute their chemical and radiographic analysis ourselves (at least without first seeing the raw data), we did not find their arguments very persuasive. For example, while it is true that the wind normally blows in the same direction (one of the industry's basic premises for discrediting the NEIC study), there are many times when the wind doesn't blow at all. It is at these times when atmospheric deposition would not follow a directional pattern of distribution. To demonstrate this principle, look at the large stands of dead trees around the village of Kittatinny, which is located west of the west plant. If wind direction (normally from west to east) were so important in determining the distribution of atmospheric deposition, why are there stands of dead trees that do not decompose around the village of Kittatinny, just like the stands that flank Stony Ridge, along Little Gap Road east of the east plant. Why are there areas around Kittatinny carpeted with Branching Sandwort (*Minuartia patula*) and Plume Poppy (*Macleaya cordata*), plants that are not only tolerant of, but highly favored by metals contaminated soils? It is because there are large areas with metals contaminated soil around the Village of Kittatinny. We must insist that the EPA respond to the industry's criticism of the NEIC study. If the NEIC's analysis was incorrect, then explain why and consider efforts to adjust the study design and/or analysis so that it meets it's objectives. If the NEIC's analysis is not flawed, then we must insist that it be used to supplement the Human Health Risk Assessment, the ecological risk assessment, and the feasibility study (as promised in your responsiveness summary). We must insist upon an explanation as to why such an important and conclusive study has been disregarded for so long.

Our review of the Human Health Risk Assessment concluded that lead in Palmerton soils is as bioavailable as the standard IEUBK default parameters assume. EPA justified deviating from the 500 ppm risk based health standard established by PaDEP's Act 2 by adjusting the ingestion parameter from the standard default of 100 mg/day to a maximum of 84 mg/day. This "adjustment" raised the cleanup standard to 650 ppm. We do not believe EPA's decision to adjust this parameter is protective of human health, and must insist that serious consideration be given to re-establishing Pennsylvania's 500 ppm risk based health standard for residential soils.

The Human Health Risk Assessment used an alternative method for quantifying the risk from cadmium exposure than EPA's standard protocol which involves application of the reference dose (RfD). The justification stated in the risk assessment report summary reads:

> "Use of the RfD for shorter periods of exposure may significantly overestimate potential threats from cadmium exposure. For this assessment, an alternative approach is taken where kidney concentrations for cadmium are estimated based on exposure durations representative of the population in Palmerton and surrounding areas. These calculations are made for both cadmium exposure related to environmental contamination in Palmerton and surrounding areas, and for estimated background exposure to cadmium, mainly from dietary sources. The results are expected to be more representative of actual cadmium-related risks than use of the RfD in the standard fashion suggested by EPA (1989a)."

This paragraph states that the justification for application of an alternative methodology is out of concern that the potential for risks could be overestimated. However, it also states that the assessment of cadmium risks was based on **estimates** of exposure duration, background concentration and the potential from dietary sources, **not actual measurements**. The language in this paragraph includes numerous qualifying words such as "may significantly overestimate" and "The results are expected to be more representative". We feel that these statements clearly demonstrate EPA's position that it would rather underestimate than overestimate the risks from cadmium exposure in Palmerton. Consequently, we feel it is necessary for EPA to calculate the risk from exposure to cadmium in Palmerton using it's standard protocol (1989a), and compare those results with the values reported in the completed OU#3 risk assessment. Finally, the risk assessment states that possible remediation goals for cadmium in soil and dust may be about 130mg/kg and 65 mg/kg, respectively. We strongly believe that EPA must establish conservative risk based cleanup standards for cadmium and apply them to both the feasibility study and the proposed plan. Environmental samples collected from homes and yards to establish cleanup eligibility must also be analyzed for cadmium.

Similarly, the risk assessment report states that cancer risks which exceed EPA's 1×10^{-4} threshold are associated with arsenic exposure concentrations in soil and/or dust greater than 100 mg/kg. It is then stated that possible remediation goals for arsenic based on noncancer effects may be about 79 and 32 mg/kg for soil and dust respectively. EPA assumed in the risk assessment that areas where these concentrations may be exceeded are limited, and overlap those where possible lead remediation goals are exceeded. We strongly believe that EPA must establish conservative risk based cleanup standards for arsenic. These standards should reflect the National Academy of Science's recent report which concludes that both the cancer and noncancer risks from arsenic exposure are more serious than previously believed. The National Academy of Science's study recommends reducing the drinking water standard for arsenic from 50 ppb (parts per billion) to 5 ppb. We do not accept EPA's assumption that unacceptable levels of arsenic are only found where lead remediation goals are exceeded, and must insist that environmental samples collected for cleanup eligibility also be analyzed for arsenic.

Finally, we are very concerned that the practice of compositing samples, as described in the proposed plan, will serve to dilute samples collected from hot spots, and lead to inaccurate eligibility assessments and an incomplete cleanup. We are as aware, as EPA and the Industry are also, that many residences in the Palmerton valley have participated in programs like the interim action and Neighbor Helping Neighbor, where only a portion of the property was addressed or the remedial action involved tilling and/or adding soil amendments. Further, many Palmerton residents replaced sections of their lawns with stone or other ground cover materials because of the difficulty they had maintaining an attractive lawn. These types of areas are not expected to have metals concentrations which are representative of the actual pattern of industrial contamination. We believe that for EPA to demonstrate it has conducted a cleanup which is sufficiently thorough to delist any part of the site, it must analyze each environmental sample accurately and independently for all contaminants of potential concern, and conduct an independent risk assessment for any areas with contamination levels in excess of the health based risk standard for residential soils and dust that remain unremediated. In addition, the use of institutional controls where soil and/or dust cleanup is not feasible or permitted by the owner should be carefully and conservatively evaluated in the context of long term risks to human health and the environment.

We thank you for your careful consideration of our concerns expressed in this correspondence. Please provide a substantive written response that addresses these issues.

Sincerely,

The PCCE