

## **Summary of the Friday, July 29, 1994 Executive Session**

### **Attended and as reported by Dale Bruns, Ph.D., Environmental Toxicologist**

My goals in the Executive Session were to: 1) represent the interests of PCCE regarding health concerns at Palmerton and to do this from a technical and scientific basis; 2) support the position that cleanup activities (and EPA's role) should not be accelerated and then quickly terminated at the expense of human and environmental health concerns; 3) provide a technical point of view in discussions that various cleanup options, including soil removal, be given adequate consideration at Palmerton, and 4) gather more information and data on the Palmerton situation as viewed by EPA and other involved parties. In general, I believe these goals were met.

The Executive Session was largely a discussion led by Dr. Bornschein and focused on 10 questions; the intent was to deal with technical and scientific data, objectives, and issues and how the group of scientists could provide such input to EPA and PETF. The session was typical of my other experiences on scientific panels: wide-ranging discussion with some topics getting a lot of attention while others were mentioned more in passing. It should be noted that the session was ended reasonably close to schedule and there was not sufficient time to cover all topics or to raise all issues. I did not think any particular issues were necessarily avoided, but typical of scientific discussions, a lot of time was spent on items where there was more certainty and data (e.g. Pb) while topics of uncertainty were more briefly engaged.

In what follows, each numbered point refers to my summary of the discussion for each of the 10 respective questions. I have enclosed a copy of my notes for your reference but it should be noted that it was more difficult to take notes in the Executive Session when one is participating in the ongoing discussions. Also, my attempts to summarize discussions on a particular numbered question do not necessarily reflect the actual temporal sequence of events. The discussions were free ranging and we often jumped ahead (unaware at the time perhaps); in some cases, there was not a lot of new discussion on a specific question if time was limiting and it was touched upon earlier.

#### **Question 1. Is there a current health concern due to lead exposure? Future concern?**

A considerable amount of time was spent on this questions. CDC's (Centers for Disease Control) reference blood Pb level of 10 ug/dL for children was repeatedly cited as the metric for health delineation and the scientific effort and research behind that number was unquestioned (and apparently highly regarded) by the group. ATSDR reaffirmed their data and studies and various people cited the national statistics for blood Pb vs. those at Palmerton.

Some of the local citizens on PETF and local (including County) officials asked how Palmerton should be evaluated for blood Pb levels. The scientists indicated that other smaller, rural communities, like Palmerton, would be the more appropriate comparison rather than large urban cities where various high lead exposures have existing historically. No one had good data for this but it was repeatedly recommended that more blood Pb testing in Palmerton was needed now and into the future to determine trends over time. Volunteer efforts at Palmerton to date in this regard have not been sufficient for scientific analyses and purposes. There was no resolution as to how to obtain better citizen participation in blood Pb monitoring at Palmerton; mandatory programs are very unpopular while voluntary efforts are not sufficiently representative for scientific trend analysis.

Some people on PETF stated concerns about labeling Palmerton as a town with a Pb health problem; some officials (County?) asked that if there is a Pb problem in Palmerton, then should they be concerned about other small towns (like Jim Thorpe) that may likewise have a problem and how do they deal with it. EPA stated that the citizens of Jim Thorpe were briefed and appraised of the ATSDR studies and conclusions (including blood Pb health concerns) and other data collected for their town; apparently EPA gave them options and avenues to pursue to rectify the problem. Some state programs for Pb monitoring were reiterated as being appropriate to address concerns in other towns.

It should be noted that EPA clearly stated their position that there are health concerns with both Pb and Cd at Palmerton based on both the ATSDR studies and the NEIC study, the latter which would require more extensive review. Also, Ms. Roberts stated clearly for the record, her view and PCCE's view that there are Pb health concerns at Palmerton. She also recommended that the discussions should focus only on Palmerton since this was the objective of the symposium and the executive session; the discussion leader agreed.

After considerable discussion of this issue, the scientists had not stated explicitly that there was a health concern due to lead exposure. Most statements reiterated Palmerton data and statistics and the CDC's reference level. I pointed out to the group and the discussion leader that in over an hour's time, there was universal agreement with CDC's value and no one questioned the Palmerton blood Pb levels (ATSDR studies) nor the national mean blood Pb values. I recommended that we had scientific agreement on Pb exposure being a health problem at Palmerton and that the group strongly advises getting more participation in (voluntary) blood Pb lead monitoring in order to support scientific trend analysis. The discussion leader appeared to agree and this presumably was recorded in the discussion notes for the executive session; there was no statement as to the source of Pb (e.g., house paint vs. soil).

**Question 2. How does Palmerton compare to other communities with respect to lead exposure?**

This question was covered above and reaffirms the group's conclusion. No one questioned national statistics, the CDC's established health delineation value, nor Palmerton results based on the ATSDR studies; other relevant data (besides Jim Thorpe) from smaller towns like Palmerton were unavailable during the discussion.

**Questions 3 and 4. What are the sources and pathways of lead exposure? What are the remaining uncertainties?**

These two questions appeared to be closely linked. Besides some discussion with monitoring methods (e.g., XRF, L-shell focus on Pb in paint surfaces), the greatest uncertainties appear to be in the sources and pathways of Pb exposure. I cannot say that there was any agreement on these questions other than the high likelihood of multiple pathways (e.g., house paint, cigarettes, soil, etc.) at Palmerton (and most Pb contaminated sites?). The NEIC study did not come up a lot in the executive session (presumably because the study requires more detailed review and specialized expertise before it could be discussed by a general panel); however, it was considered that a blood Pb signal can be identified (based on analysis of very small amounts of blood) relative to paint sources. The costs of this type of sampling, on a house by house (child by child) cleanup basis, is about \$1,000-\$2,000/child.

**Question 5. Is cadmium exposure a cause for concern?**

There appeared to be fewer scientists with research expertise in Cd and Cd received considerably less discussion than Pb. EPA reiterated their position of health concerns with Cd in Palmerton soils based on the ATSDR studies. One scientist pointed out another site where high Zn levels may “offset” the effects of Cd and some research on bioavailability of Cd was mentioned.

I did ask Dr. Carpenter that if EPA found a health risk for Cd at Palmerton, was his company sufficiently flexible to incorporate mitigations for Cd into it’s corporate environmental remediation work. He was noncommittal in this regard and the question of Cd risk was thrown out for consideration by the panel. There was considerably more uncertainty here than for Pb.

It appeared that EPA would look at Cd closely in the new risk assessment study for Palmerton; one of the products from the scientific panel during the day was apparently to be some recommendations to EPA on what should be addressed in the new risk assessment study. EPA explicitly asked for technical input to this study, but there was no time to do this during the executive session; it appeared that this would be done by the scientific panel sometime later.

**Questions 6 and 7. Do arsenic and zinc pose health concerns? What issues should be considered in the risk assessment process?**

These were not discussed much other than in passing or in reference to what EPA would do in the new risk assessment study. Two scientists made mention that reference doses (e.g., as in the EPA RAGS manual for superfund sites) for As and Zn may be controversial, given uncertainties and studies on bioavailability. There was nothing formally recommended nor agreed upon here. As noted above for question 5, the scientific panel was planning to provide input to EPA for the new risk assessment for Palmerton either later that night, the next morning, or at a later time. It would be my recommendation that PCCE also provide some input and I would be glad to do this as part of the technical team.

**Question 8. What are the impacts on the local ecosystem/agriculture?**

There was little consideration (time available) on impacts to ecosystems. However, one scientist (Chaney) recommended that local farmers be compensated for the extra costs of lime they need to put on their fields in order to get commercial productivity from contaminated soils.

**Question 9. Can significant sources and pathways be prioritized and interventions recommended?**

The uncertainties with attributing contamination to multiple sources and pathways was evident here also. There did not seem to be disagreement that there were multiple sources and that these needed to be considered in interventions. However, the “Three Cities” Pb study did come up and it was recommended on the basis of this study that soil removal at Palmerton would not result in any significant decrease in blood Pb levels there. I objected to this position on several points as noted below.

First, our earlier discussions on question 1 above recommended that other smaller towns in more rural settings should be the basis for evaluating the situation at Palmerton. I indicated that the “Three Cities” study was urban in focus and not likely to be appropriate for a specific application at Palmerton.

Second, the “Three Cities” urban area was designed to answer different kinds of questions and situations than those that prevail at Palmerton. The urban study, while providing useful insight on the complexity of the problem, was not intended to answer questions in rural, small towns and it would not be appropriate to use it in this fashion.

And third, I pointed out that several other factors are important as to whether soil removal would result in a significant reduction in blood Pb values. I quoted the “Guidelines for Lead in Soil” in Environmental Science and Technology (Wixson and Davies, 1994) as proposed by the Society for Environmental Geochemistry and Health. In these guidelines, background blood Pb levels, the geometric standard deviation of blood Pb levels, the slope of the blood Pb vs. soil Pb relationship, and the level of protection are factors that may effect the potential outcome and success of soil removal efforts.

In conclusion, I recommended that all cleanup options, including soil removal, be available for consideration and use at Palmerton. If good scientific data can be used in conjunction with the above “Guidelines for Lead in Soil” then that should be the basis for a technical decision, not a single study on three urban areas in the inner city. The discussion leader acknowledged the importance of these other factors and the need for site specific data (some of which he quoted in his day-time presentation); presumably this is reflected in the notes (minutes) of the executive session.

**Question 10. How does Palmerton develop the local infrastructure to implement and evaluate actions taken to reduce lead exposures?**

On several occasions, EPA stated that Palmerton citizens need to work together in order for effective remediation to proceed; they cannot continue to say they have no health concerns in the town and agreement on that or at least an acknowledgment that there are others with this view would be the first step in this direction. No one questioned the need for some type of infrastructure. There were few specifics that emerged from various discussions of this issue. In a general sense, some help from county and state agencies (e.g., evaluate houses for paint remediation or Pb testing) were identified. At the local level, Dr. Bornschein proposed a model being planned for towns like Butte, MT or Leadville, CO. In this scenerio, PRP’s fund lead reduction and communities make the decisions and set priorities; all sources of lead can be considered and apparently soil removal is an option that can be used. Ongoing and followup screening and monitoring of Pb is a part of this program. There were few other specifics and I believe Dr. Bornschein indicated he would obtain one of the plans for reference and review.

I indicated that if all cleanup options are available for use and if there was genuine demonstrable success (i.e. measurable and reasonable drops in blood Pb in children) with such a program, then it would be worth looking at as a potential approach for Palmerton. [However, Cd (and Zn and As) cleanup was not mentioned in this model and I am not sure what role regulatory agencies like EPA play in this process. I am under the impression that this model is the result of a court-ordered Consent Decree and I am not sure how this would work at Palmerton. We did not have time to deal with these details as we ran out of time so these issues were not discussed].

[As a separate point, relative to the above discussions in general, I believe Ms. Roberts did a very good job in stating and representing PCCE’s viewpoint on a number of issues. This was important in setting the record straight about the diversity of views in Palmerton, especially if they contrasted with positions taken by industry or other segments of the community].