

2005 Fall Meeting  
Search Results

Cite abstracts as **Author(s) (2005), Title, *Eos Trans. AGU*, 86(52), Fall Meet. Suppl., Abstract xxxxx-xx**

Your query was:  
**pingitore**

---

0800h

**A11B-0875**

[Lead Contamination of Urban Soil in the El Paso \(Texas\)--Juarez \(Mexico\) Border Metroplex](#)

\* **Pingitore, N E**

*nick@geo.utep.edu*

*The University of Texas at El Paso, Department of Geological Sciences, El Paso, TX 79968 United States*

**Amaya, M A**

*mamaya@utep.edu*

*The University of Texas at El Paso, College of Health Sciences, School of Nursing, El Paso, TX 79968 United States*

**Clague, J**

*jclague@utep.edu*

*The University of Texas at El Paso, Department of Geological Sciences, El Paso, TX 79968 United States*

We present an unusually detailed map of the distribution of lead in El Paso--Juarez soils, one that is based on x-ray fluorescence analysis of 1000 composite soil samples collected in the region. Mixing equal volumes of samples taken from the public space in front of individual houses or structures around a single municipal block created a single composite sample to characterize each of the 500 blocks studied in each city. Maps based on such composites highlight the distribution of lead at the neighborhood level, and de-emphasize any anomalous elevated level associated with an individual house or structure. In both cities, levels of lead are highest in their contiguous downtown commercial districts, which date to the 19th Century and are linked by the traditional border river crossing area at the Rio Grande. Rail yards, transport hubs, light industry complexes, and the oldest residential areas lie adjacent to, and inter-tongue with, this commercial district on both sides of the border. A century-old smelter, placed on standby six years ago, abuts the western limit of the old urban core in El Paso. The continuity of this elevated-lead zone, the proximity of the smelter, the many potential lead sources associated with traditional commercial activities, and the age of its structures, make it difficult to differentiate lead sources. Lead values decrease systematically away from this urban core zone, with the lowest levels generally encountered in peripheral, lightly populated developments and communities. The binational distribution of Pb in soil is consistent with Pb measurements reported on particulate matter taken from nine air monitoring stations (covering both

cities) during the 1990s. Soil data thus can complement air studies by providing an essentially infinite geographic network of sampling sites that, with varying accuracy, record and integrate air conditions over years and decades. Research supported by NIEHS Grant 1RO1-ES11367.

1065 Major and trace element geochemistry

1875 Vadose zone

Atmospheric Sciences [A]

Fall Meeting 2005

---

**New Search**

