

Attachment 3
Colorado Superfund Bulletin for Health Professionals

COLORADO SUPERFUND BULLETIN

for Health Professionals

ASARCO GLOBE PLANT



Colorado Department
of Public Health
and Environment

This Superfund Bulletin is the fourth bulletin regarding the ASARCO Globe Plant. These materials are intended to give area health care providers and other health professionals additional information on site contaminants, exposure pathways, and human health effects

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

OCTOBER 1996

MEDICAL MONITORING RESULTS AVAILABLE FOR ASARCO GLOBE PLANT SITE

Results are available for the Medical Monitoring Program in the Globe area which began March 1994. The program is run by ENSR Consulting and Engineering with oversight by the Colorado Department of Public Health and Environment (CDPHE). Confidential testing of blood and urine is provided for residents surrounding the ASARCO Globe Plant, to evaluate exposure to lead, cadmium, and arsenic. The Globe Plant is located at 51st and Washington Street in Denver.

Lab tests for blood lead, blood cadmium, and urine arsenic indicate recent exposure to metals while the urine cadmium test indicates long-term exposure to cadmium. Potential kidney damage is indicated by beta-2 microglobulin testing.

The target population is defined as all residents within the area delineated by I-70, I-25, 64th Avenue, and the S. Platte River (known as the footprint area). This

represents the group most likely to be exposed to metals from the Globe Plant. Former residents or workers and frequent visitors to the area are also eligible for testing.

All individuals with test results above the program's action levels, listed in the chart below, received followup from the Medical Monitoring Program.

Results for 1994-1995

Lead. Eight participants (all under age 6) had blood lead levels above the Action Level. The source of exposure for 5 children was lead based paint. In 2 children the source is believed to be lead based paint and, to a lesser extent, soil in a yard or play area. No source of exposure was identified for one child.

Arsenic. No elevations of urine arsenic were found.

Cadmium. The most important current exposure to cadmium in this population is inhalation of tobacco smoke.

For blood cadmium, 91% of the people with test results above the Action Level were smokers. The risk of blood cadmium elevation is 25 times greater in smokers than non-smokers.

A significant finding is that length of residence in the Globe area is a risk factor for long term cadmium exposure. Former and present Globe area residents living more than 30 years in the area are more than twice as likely to have an elevated urine cadmium result as those living fewer years in the area. Age and smoking status does not account for the increased risk of chronic exposure.

Kidney function. One adult had both an elevated beta-2 and urine cadmium result. This person is the only participant with a metal related illness, confirmed by a toxicologist, in the medical monitoring program to date.

The 41 individuals with an elevated beta-2 microglobulin, but no elevation of urine cadmium indicating metal exposure, were referred to their personal physicians.

Soil cleanup results. 145 people were retested after replacement of the contaminated soil in their yards. Three non-smokers had an elevation of blood cadmium at remediation. It is possible that these three experienced cadmium exposure during remediation. Two of the three had a reduction of blood cadmium during follow-up testing.

Medical Monitoring Test Results 1994-1995

| Test | Action Level | % Above Action Level | # Above Action Level |
|--|---|--|----------------------|
| blood lead (1,371 tested) | 10 ug/dL (\leq 18 years) 25 ug/dL ($>$ 18 years) | 0.6% | 8 |
| blood cadmium (1,371 tested) | 2 ug/L | 6.1% (27% of smokers, 1.1% of non-smokers) | 83 |
| urine cadmium (1,061 tested) | 2 ug/L or 2 ug/g creatinine | 3.7% | 39 |
| urine arsenic - speciated (919 tested) | $>$ 20 ug/L or $>$ 20 ug/g creatinine | 0% | 0 |

RESULTS OF 1996 CANCER STUDY OF RESIDENTS LIVING NEAR THE ASARCO GLOBE PLANT

The May 1995 report *Cancer Study of Residents Living Near the ASARCO Globe Plant, Denver, Colorado* looked at cancer occurrence for residents living near the ASARCO Globe Plant. The number of cases observed was compared to the numbers expected based on cancer rates from the Denver Metropolitan area. The time period studied was 1980-1990, and the cancers studied were lung, prostate, larynx, kidney, bladder and liver. Three census tracts near the plant site were studied. Two tracts showed no difference between observed and expected cancer rates. In one of those tracts (tract 15.00, south of the plant), the number of lung cancers reported in men was higher than expected, compared to cancer counts from the Denver Metropolitan area.

1996 cancer study update Although census tract 15.00 had higher cancer counts than expected, this area was not specific to the area of known contami-

nation (the footprint area). In response to community concerns, a follow-up study was done to analyze lung cancers for block groups to more closely examine the area of known soil contamination.

Census tract 15.00 consists of three separate census block groups. Block group one and two correspond very closely to the area of residential soil contamination. Cancer Registry staff calculated new observed/expected ratios for lung cancer cases diagnosed in each of the three block groups.

Results of the cancer update

► Lung cancer counts were not statistically elevated in block groups one or three.

► In block group two, lung cancer was statistically elevated in men ages 15 through 64 years old.

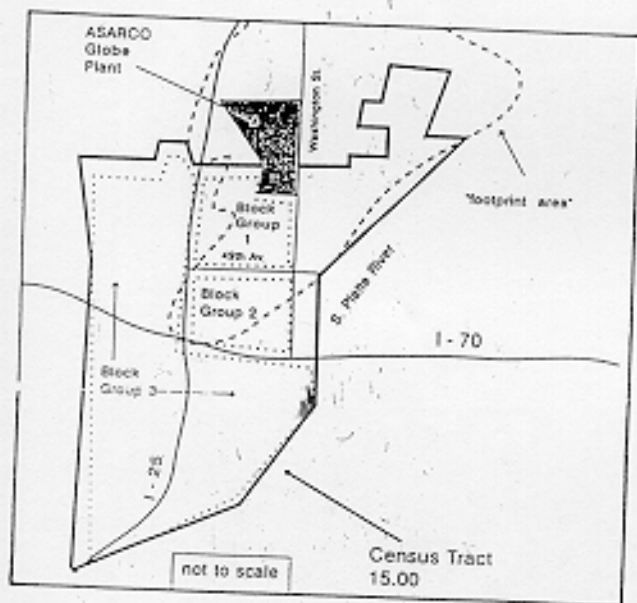
► Lung cancer was not higher than expected in women or in younger or older men for any of the block groups.

Further studies for Block Group Two

Six of the 11 cases of lung cancer reported in block group two occurred in men ages 15-64 years old who listed the same address at the time of diagnosis. Their reported home was a group quarters that typically house up to 100 people for about six months. These men are not likely to represent household exposure for the rest of the block group.

A separate analysis was done to evaluate lung cancer risk in the household population only (excluding the temporary group housing facility). Using this approach resulted in an observed/expected lung cancer ratio for block group two which was not statistically elevated.

Map of Globe area



GLOBE AREA HEALTH REPORTS ARE AVAILABLE

The following materials are available from Nancy Strauss, Colorado Department of Public Health and Environment at 303-692-3407:

- the Medical Monitoring annual report
- the 1995 Community Summary for the Medical Monitoring Program
- the 1995 *Cancer Study of Residents Living Near the ASARCO Globe Plant, Denver, Colorado*
- the 1996 Globe area cancer study update.

For a brochure listing materials for health care providers regarding Superfund sites in the state and health risk information on hazardous chemicals, contact CDPHE at 303-692-2614.

For further information, contact the following CDPHE personnel:

Superfund Clean-up:
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This fact sheet was prepared by the Colo. Dept. of Public Health & Environment, Environmental Health Education Program and was supported by funds from the Comprehensive Environmental Response, Compensation, and Liability Act trust fund through a cooperative agreement with the Agency for Toxic Substances and Disease Registry, Public Health Service, US Dept of Health and Human Services.