

Health Consultation

Public Water Quality Concerns of Residents Living Near the

KOPPERS INCORPORATED SITE

**2201 EDMONDS STREET
NORTH LITTLE ROCK, PULASKI COUNTY, ARKANSAS 72117**

EPA FACILITY ID: ARD006344824

JUNE 16, 2006

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

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Prepared by:

Arkansas Department of Health and Human Services
Division of Health
Under Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry
Atlanta, Georgia 30333

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Statement of Issues and Background

Koppers Incorporated area residents (from Glenview and Poe Addition) requested that the Arkansas Department of Health and Human Services' Division of Health (ADOH) (formerly known as the Arkansas Department of Health) sample the public drinking water and evaluate the results. Residential complaints included an unusual odor and floating particles in the water. It was alleged the chemicals used in the processing of wood at the nearby Koppers facility entered the water distribution system through the underground pipes and created these problems. The findings of ADOH's efforts to resolve the community's concerns are explained in this health consultation prepared under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR).

Koppers Incorporated, located at 2201 Edmonds Street, North Little Rock, Arkansas, has been treating wood at this site since 1907. The plant processes and treats over 1.5 million crossties yearly. Other products include switch ties, road crossings and framed bridge timbers. Some of the chemicals that have been used to treat wood at the site are creosote, pentachlorophenol, and chromated copper arsenate [1].

In January 2005 a Petitioned Public Health Assessment (PHA) was completed to address concerns about past, current, and future health hazards and odors associated with Koppers Incorporated (or Koppers), previously known as Koppers Industries Incorporated. The PHA stated that the groundwater beneath Koppers has been impacted by the company's activities. However, residents in the vicinity of the contaminated groundwater use the public water supply as their drinking water source [2]. The cities of Little Rock and North Little Rock provide public drinking water via Central Arkansas Water for the area communities. The public water supplied by these cities is not affected by Koppers. The public water is tested regularly by the ADOH Engineering Branch to make sure that it meets health standards [3].

A public meeting was held on December 1, 2005, to address community questions and/or concerns related to the Koppers facility. The Arkansas Department of Environmental Quality (ADEQ) and the Environmental Protection Agency (EPA) hosted the public meeting. Personnel representing various departments within ADEQ, EPA, ADOH and the Arkansas Department of Emergency Management (ADEM) attended the meeting; as well as personnel from the Technical Outreach Services for Communities (TOSC), Koppers Incorporated, and other community-based representatives and residents. A total of approximately 55 people attended the public meeting.

At the public meeting held at the Glenview Recreation Center in North Little Rock, a few individuals expressed concerns about the quality of the public drinking water in their homes. One resident voiced specific concerns about an unusual odor and floating particles in his water. ADOH personnel visited the next day with the community member at his place of residence to discuss his concerns in more detail. ADOH decided to test the resident's tap in order to be representative of this home and other homes in the area served by the same water source. During the visit, the sampling plan developed by the

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ADOH Engineering Branch was explained to the resident. (The Engineering Branch of ADOH has the primary function of regulating and overseeing public water systems in the state of Arkansas.)

On December 5, 2005, water samples were collected in accordance with the sampling plan. After evaluating the sample results, a personal correspondence and a copy of the analytical data were sent to the resident on December 19, 2005. Copies of the findings were also distributed to other interested residents and stakeholders.

Discussion

Central Arkansas Water's 2004 Annual Water Quality Report indicated di-n-butyl phthalate was detected in the treated water of their Ozark Point Treatment Plant [4]. The Ozark Point Treatment Plant serves areas of North Little Rock south of I-40, including the Koppers area communities. As expected, di-n-butyl phthalate was detected in the water samples collected from the resident's home by ADOH at a concentration of 2.20 micrograms per liter ($\mu\text{g/L}$) or parts per billion (ppb). One ppb is approximately equal to a half teaspoon in an Olympic-size swimming pool. The resident's results would be a little over one teaspoon in an Olympic-size pool.

Di-n-butyl phthalate is an unregulated contaminant that EPA requires all states to monitor for the purpose of determining its occurrence and whether future regulation is warranted. EPA Region 6 - Human Health Medium - Specific Screening Levels (HHMSSL) for di-n-butyl phthalate is 3,700 $\mu\text{g/L}$, or approximately 1,680 times greater than was detected in the resident's water. A HHMSSL is a source of chemical concentration that corresponds to a fixed level of risk in soil, air and water that is protective of health.

Trihalomethanes are a group of chemicals that are formed along with other disinfection byproducts when additives like chlorine are used in drinking water. The four total trihalomethanes are: chloroform, bromodichloromethane, dibromochloromethane, and bromoform. Bromodichloromethane and chloroform were detected in the resident's water at levels below EPA's Maximum Contaminant Level (MCL). A MCL is the maximum concentration of a chemical that is allowed in public drinking water systems. EPA has set a MCL for total trihalomethanes (sum of the four concentrations) at 80 $\mu\text{g/L}$ [5]. The sum of the two trihalomethanes (chloroform and bromodichloromethane) detected in the resident's water was 25.13, or 3 times less than the MCL.

The sample results indicate that the public water provided by Central Arkansas Water is considered safe. As shown in Table 1, the detected contaminants do not exceed their respective health comparison values and as a result do not pose a public health hazard.

The health comparison values presented in Table 1 represent the concentration in water of each detected contaminant that, if exceeded, would have required further evaluation as a contaminant of potential health concern. However, concentrations below these comparison values indicate that exposure is unlikely to pose a health hazard, and therefore, required no further evaluation. These comparison values were derived assuming that a child or adult would drink two liters of water per day for 70 years. This assumption is likely to be an overestimate of exposure, and as a result, protective of public health [6].

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Table 1. Analytical results of water samples collected from a North Little Rock, AR resident's home on December 5, 2005 by ADOH, Engineering Section

Analyte	Concentration (µg/L)*	Comparison Value (µg/L)*
Di-n-butyl phthalate	2.20	3700†
Bromochloromethane	3.43	80 ‡
Chloromethane	21.7	80 ‡

* (µg/L) = microgram per liter or part per billion (ppb)

† Environmental Protection Agency (EPA) Region 6 - Human Health Medium - Specific Screening Levels (HHMSSL) is a source of chemical concentrations that correspond to fixed levels of risk in soil, air and water.

‡ EPA Maximum Contaminant Level (MCL) is for total trihalomethanes (sum of the concentrations of chloroform, bromodichloromethane, chlorodibromomethane, and bromoform).

Community Health Concerns

This health consultation was prepared to address community concerns about their public water quality. It was claimed that the public water taken from a residential tap had an odor and particles floating in it. Some community members alleged the chemicals used in the processing of wood at the nearby Koppers facility entered their water distribution system through underground pipes and created these problems.

The detected levels of chemicals were below their respective child and adult health comparison values and do not pose a health hazard to those exposed.

Child Health Considerations

ADOH and ATSDR recognizes that infants and children may be more vulnerable to exposures than adults when faced with contamination of air, water, soil, or food. Critical periods exist during development, particularly during early gestation, but also throughout pregnancy, infancy, childhood and adolescence [7]. This vulnerability is a result of the following factors:

- Children are more likely to play outdoors and bring food into contaminated areas.
- Children are shorter and their breathing zone is closer to the ground, resulting in a greater likelihood to breathe dust, soil, and heavy vapors.
- Children are smaller and receive higher doses of chemical exposure per body weight.
- Children's developing body systems are more vulnerable to toxic exposures, especially during critical growth stages in which permanent damage may be incurred.

The detected levels of chemicals were below their respective child and adult health comparison values and do not pose a health hazard to those exposed.

Conclusions

- Testing conducted on the North Little Rock resident's public water in December 2005, revealed low levels of di-n-butyl phthalate, bromochloromethane, and chloromethane.
- The levels of these chemicals were below their respective health comparison values and pose *no apparent public health hazard* to exposed individuals.

Recommendations

ADOH recommends that residents continue to use the public water supply as their drinking water source.

Public Health Action Plan

The purpose of the Public Health Action Plan (PHAP) is to ensure that this Health Consultation not only identifies any public health hazards, but also provides a plan of action designed to mitigate and prevent adverse human health effects resulting from exposure to hazardous substances in the environment. The PHAP implemented by ADOH for Koppers Incorporated is as follows:

Completed Actions

- ADOH prepared a Public Health Assessment in January 2005, entitled "Koppers Industries, Incorporated".
- ADOH personnel attended scheduled CAP meetings.
- ADOH personnel attended a public meeting on December 1, 2005. Information presented during the meeting led to the preparation of this document.
- ADOH Epidemiology Branch personnel coordinated with ADOH Engineering Branch personnel to conduct water sampling of the public water system in the community near Koppers on December 2, 2005.
- ADOH Epidemiology Branch personnel visited area residents on December 2, 2005 to discuss concerns and to share the water-sampling plan.
- ADOH Engineering Branch personnel collected water samples from the resident's home on December 5, 2005.
- ADOH mailed a personal correspondence explaining the water testing results and a copy of the analytical data to the resident; copies also were sent to the Director of Source and Treatment for Central Arkansas Water, Director of ADEQ, and other stakeholders/residents in December 2005.
- ADOH and ATSDR developed and distributed to area residents a fact sheet containing a section on the communities' public water source in March 2006.

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Ongoing Activities

- ADOH's health educator provides educational material and acts as a resource person for the community.
- ADOH attends the quarterly CAP meetings, as well as any other state and/or federal meetings.

Future Action Plans

- ADOH will continue to review available sampling data to monitor for changes that might affect public health risk.
- ADOH's health educator will continue to provide educational material and act as a resource person.
- ADOH will continue to attend future CAP meetings, as well as any other state and/or federal meetings.
- ADOH will continue to work with the community groups, as needed.

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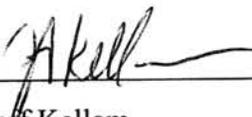
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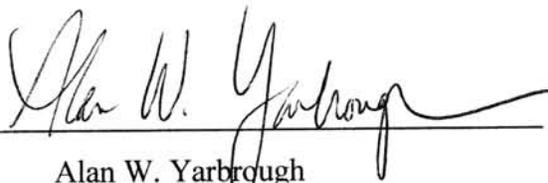
Certification

This health consultation for Koppers Incorporated was prepared by the Arkansas Division of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It was completed in accordance with approved methodology and procedure existing at the time the health consultation was initiated. Editorial review was completed by the cooperative agreement partner.



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The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.



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