

PRELIMINARY Health Assessment for

MYERS PROPERTY

CERCLIS NO. NJD980654198

FRANKLIN TOWNSHIP, NEW JERSEY

APRIL 10, 1989

AMENDED

Agency for Toxic Substances and Disease Registry
U.S. Public Health Service

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, this Health Assessment has been conducted using available data. Additional Health Assessments may be conducted for this site as more information becomes available.

The conclusions and recommendations presented in this Health Assessment are the result of site specific analyses and are not to be cited or quoted for other evaluations or Health Assessments.

PRELIMINARY HEALTH ASSESSMENT
MYERS PROPERTY
FRANKLIN TOWNSHIP, NEW JERSEY

Prepared by:
Office of Health Assessment
Agency for Toxic Substances and Disease Registry (ATSDR)

Background

The Myers Property Site (MPS) is listed by the U.S. Environmental Protection Agency on the National Priorities List. The 5.5-acre site is located in Franklin Township (Hunterdon County), New Jersey. MPS was a former pesticide manufacturing operation. Currently, MPS is used as an auto repair/air conditioning operation as well as a private residence. ATSDR considered MPS "an imminent health threat" and recommended that access to the site be restricted. In addition, ATSDR recommended that the on-site barn and warehouse should not be entered unless personal protective equipment is worn. Other ATSDR recommendations included further characterization of the site (to include additional air, soil and sediment, and food chain sampling information). In 1987, it was learned that on-site residents were raising commercial livestock (e.g., pigs) in the contaminated warehouse. ATSDR further recommended that swine be removed from the site and monitored in accordance with the New Jersey Department of Agriculture's regulations, moreover, animals intended for human consumption should not be allowed on-site. Access to the site is restricted but people currently live on-site. Removal actions have occurred. Drums, tanks, and an asbestos pile were removed in August 1984.

The following documents were reviewed by ATSDR: (1) On-scene Coordinator Report, 1988, (2) Revised Project Plan, December 1, 1986, (3) Final Workplan for the Remedial Investigation/Feasibility Study (RI/FS), September 24, 1986, and (4) ATSDR Health Consultations, April 24, 1984, June 20, 1985, October 10, 1986, July 23, 1987, and January 26, 1988. These documents form the basis of this Preliminary Health Assessment.

Environmental Contamination and Physical Hazards

Preliminary on-site surface and subsurface soil (24 inches below the surface) sampling results have identified organochlorine residues. They include DDT (surface: 9 to 1,385 ppm, subsurface: 4 to 1,490 ppm), DDD (surface: 20 to 8,600 ppb, subsurface: 30 to 97,000 ppb), and DDE (surface: 30 to 42,100 ppb, subsurface: 20 to 26,000 ppb). Dioxin (congener was not reported) was identified in soil (ND to 5 ppb). In addition, DDT was identified in surface dust (1,850 to 2,880 ppm). Off-site soil sampling results from the west bank of Cakepaulin Creek identified DDT and DDE at 16 ppm and 461 ppm respectively. No further sampling information was reported. Physical hazards were not reported.

Potential Environmental and Human Exposure Pathways

Potential environmental pathways include those related to contaminated groundwater, surface water, soil and sediment, and volatilization of contaminants in ambient air. In addition, bioaccumulation of contaminants in fish, water fowl, livestock, and commercial agricultural products may be another environmental pathway.

Potential human exposures to contaminants include ingestion of and direct contact with groundwater, surface water, soil and sediment, and possible ingestion of bioaccumulated contaminants in the food chain. In addition, inhalation of volatilized contaminants or contaminants entrained in air is another potential source for human exposure.

Demographics

There are about 250 people living within a 1-mile radius of the site. A private residence is located on-site.

Evaluation and Discussion

Area private wells used for potable purposes are not contaminated. There are no municipal wells within the vicinity of the site. However, groundwater sampling information was not reported.

A spring surfaces on-site and flows to Cakepoulin Creek. The creek in turn flows into the south branch of the Raritan River. On-site surface water samples identified "elevated levels of DDE and DDT" (April 1985) in sediment. Area surface water is used for swimming and fishing. Trout are reportedly stocked in area surface water. It was reported that 34 fish (edible) samples were collected and analyzed for polychlorinated biphenyls (PCB's) and organochlorines. However, fish flesh sampling information was not reported. In addition, PCB's were not reported to be present on-site.

The most recent sampling information reported was from January 1985. Although it appears that more recent sampling has been performed, further site characterization information has not been reported. Information concerning air sampling measurements was not reported. Food chain crops are likely to be contaminated.

As stated previously, ATSDR has provided five Health Consultations with respect to MPS and its respective health concerns. The conclusions and recommendations put forth in each of the previous Health Consultations regarding the public health consequences of MPS has not changed. ATSDR has prepared, or will prepare Toxicological Profiles on the site contaminants noted above.

Conclusions and Recommendations

Based on available information, this site is considered to be of public health concern because of the risk to human health caused by the likelihood of human exposure to hazardous substances. Direct contact with and ingestion of site-related contaminants by on-site residents and persons having business on-site are the exposure pathways of concern. Other exposure pathways of public health concern include ingestion of groundwater and bioaccumulated contaminants in the food chain by on-site and area residents and inhalation of site-related contaminants in enclosed areas (e.g., house, barn, and warehouse).

Additional information on contaminants released, populations potentially exposed, and environmental pathways through which the contaminants can reach these populations is necessary. At a minimum, future investigations of this site should include a follow-up on all previous ATSDR recommendations, characterization of the site and site contaminants, an updated well survey, and a characterization of the hydrogeology of the area.

Further environmental characterization and sampling of the site and impacted off-site areas during the RI/FS should be designed to address the environmental and human exposure pathways discussed above. When additional information and data such as the completed RI/FS are available, such material will form the basis for further assessment by ATSDR as warranted by site-specific public health issues.

Myers Property
Franklin Township, New Jersey

BACKGROUND AND STATEMENT OF ISSUES

Located in Franklin Township, Hunterdon County, New Jersey, the Myers Property Site is listed on the U.S. Environmental Protection Agency's (EPA's) National Priorities List (NPL). The EPA, Region II, completed an Emergency Removal at the site (September 1989), and is currently conducting Remedial activities. The site has been used as a location for pesticide manufacturing, a private residence, and for agricultural/livestock purposes. A residence is currently located on the property. The ATSDR has completed five Health Consultations and a Preliminary Health Assessment for the site. Under a Cooperative Agreement with the ATSDR, the New Jersey Department of Health is currently conducting the Final Health Assessment for the Myers Property. Refer to the Preliminary Health Assessment for further site background and site contaminants of concern.

In the process of completing the Feasibility Study for the Myers Property Site, EPA contractors proposed several cleanup levels for DDT-contaminated soils, based on the 10^{-6} , 10^{-5} , and 10^{-4} lifetime excess cancer risk values. These cleanup values were 5.8 ppm, 58 ppm, and 580 ppm, respectively. The EPA is considering a cleanup level of 10 ppm for DDT in on-site soil and wetlands soils. The EPA is also considering that remediation of contaminated soil occur down to the average depth of the water table (approximately 5 feet). Pocketed areas that are highly contaminated with DDT below this depth may be excavated as well.

Due to the extensive DDT soil contamination found on-site, the EPA Remedial Project Manager requested that ATSDR comment on the public health significance of the DDT soil cleanup level being considered by EPA. The EPA asked if this level would be applicable to the wetlands area adjacent to the site.

DOCUMENTS AND INFORMATION REVIEWED

1. ATSDR Preliminary Health Assessment, Myers Property, November 15, 1988.
2. ATSDR Draft Toxicological Profile for DDT, DDE, and DDD, December 1988.
3. Conference Call, March 16, 1990. Participants: John Prince (EPA Remedial Project Manager), Bob McKnight (EPA NJRAB), Allan Susten, Ph.D. (ATSDR Toxicologist), Greg Ulirsch (ATSDR Cooperative Agreement TPO), Lynn Wilder (ATSDR Environmental Health Scientist), Bill Nelson (ATSDR Region II Representative), Jonathon Savrin (NJ Department of Health).

DISCUSSION

Soil sampling results of the Myers Property Site and the adjacent wetlands revealed high concentrations (>100 ppm) of DDT in some locations. The presence of chlorobenzene contamination on-site has facilitated the transport of DDT (which is usually immobile in soil) from the soil's surface down to bed rock. An adjacent trout stream has shown no DDT contamination of surface water or fish, but some DDT contamination of stream sediment was detected.

Several area springs are located on the site. Some of the surface water from these springs flows into the wetlands area. Levels of DDT were detected in spring sediments, but not in the surface waters. The wetlands adjacent to the site are owned by the State; hunting in these wetlands is illegal. It is reported that the wetlands are intermittently dry throughout the year; thus, making contact with contaminated surface soils possible.

The area surrounding the site is sparsely populated; all area residents use groundwater for potable uses. The EPA plans to address groundwater contamination by a pump and treatment method. Until treatment has been deemed effective, the EPA will continue to monitor area wells for contamination, and will consider alternate water supplies if contamination is detected. This exposure pathway will not be addressed in this document, but will be in the Final Health Assessment.

Review of information in ATSDR's Draft Toxicological Profile for DDT indicates that relative to typical background levels, the EPA cleanup level of 10 ppm DDT still represents an elevated environmental level. National soil monitoring programs reported DDT levels ranging from 0.18 to about 6 ppm. Even in areas where DDT was used extensively for agricultural purposes, soil levels were about 1 ppm (or lower) several years after moratoriums on its use were implemented. Because of the long half-lives of DDT (2 to >15 years), elevated levels of DDT are likely to remain at this site for years as are DDT's breakdown products, DDD, and DDE.

Human health concerns related to elevated levels of DDT are based on suggestive evidence of statistically significant associations between body burdens of DDT and certain types of chronic diseases. For example, positive associations have been reported between various indicators of human body burden of DDT and hypertension, arteriosclerosis, cardiovascular disorders, skin cancer, premature births, and spontaneous abortions. However, no causal relationships can be determined from such data.

Presently there are no quantitative data that allow correlations of human body burdens of DDT with environmental levels or of environmental levels with human health effects. What adverse effects have been noted were

observed in animal studies that used relatively large doses of DDT (0.02-400 mg/kg body weight) or in humans occupationally exposed to large doses of DDT. Such doses were greater than would be incurred by persons ingesting contaminated soil and inhaling contaminated dust from activities conducted on the Myers NPL Site if soil contained 10 ppm DDT (estimated 0.001 mg/kg maximum for a child ingesting a 1000 mg soil daily).

Current soil levels of DDT have apparently proved harmful to domestic animals raised or living on the site. Although the proposed cleanup level for this site can reasonably be anticipated to be protective of human health, it is not clear if it will be protective of area wildlife, particularly birds.

CONCLUSIONS

Based on available information, the ATSDR concludes that the 10 ppm soil cleanup level proposed by EPA for the Myers Property Site and adjacent wetlands can reasonably be anticipated to be protective of human health.

RECOMMENDATIONS

1. Areas of significant DDT soil contamination detected down to the water table, but not in the water table, should be considered for excavation/remediation.
2. Monitoring of area wells used for potable purposes should continue to be monitored on a regular basis, in the event that groundwater contamination occurs in the future.

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