

PRELIMINARY Health Assessment for

INTERIM

KAUFFMAN AND MINTEER INCORPORATED

SPRINGFIELD TOWNSHIP (JOBSTOWN), BURLINGTON COUNTY, NEW JERSEY

CERCLIS NO. NJD002493054

APRIL 28, 1992

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE

Agency for Toxic Substances and Disease Registry

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, risks assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, ATSDR has conducted this preliminary health assessment on the data in the site summary form. Additional health assessments may be conducted for this site as more information becomes available to ATSDR.

The conclusion 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.

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104 (i)(6)(F) 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 assessment, risk evaluations, and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, ATSDR prepared this Interim Health Assessment using available data and information. ATSDR will re-evaluate this site and prepare an updated health assessment as warranted by the availability of additional data and information and as resources permit.

INTERIM PRELIMINARY PUBLIC HEALTH ASSESSMENT
KAUFFMAN AND MINTEER INCORPORATED
SPRINGFIELD TOWNSHIP (JOBSTOWN) BURLINGTON COUNTY, NEW JERSEY
CERCLIS NO. NJD002493054

Prepared By:
Environmental Health Service
New Jersey Department of Health (NJDOH)
Under a Cooperative Agreement with:
Agency for Toxic Substances and Disease Registry (ATSDR)

SUMMARY

Kauffman and Minter is an active transporter of bulk chemicals using company-owned tanker trucks. The site occupies five acres off N.J. Route 537, in Jobstown, New Jersey. From 1960 to 1981, an on-site lagoon was used to collect effluent from the interior washing of transport trucks. That practice stopped in 1981, but the lagoon remains unremediated. Limited sample collection and analysis have detected volatile organic chemicals and other compounds on site. Suspected groundwater contamination has not been substantiated. Environmental pathways associated with on-site liquids and sediments are of greatest concern. The site was added to the NPL in March 1989. ATSDR and NJDOH consider this site an indeterminate public health hazard because the limited data and information do not indicate that humans are being or have been exposed to levels of contamination that would be expected to cause adverse health effects. However, data and information are not available for all environmental media to which humans may be exposed. The site is not being considered for follow-up health activities.

BACKGROUND

A. Site Description and History

The Kauffman and Minter site occupies an area of approximately five acres. Kauffman and Minter Inc., is an active company in the business of transporting a large variety of bulk liquids including plasticizers, resins, vegetable oils, petroleum oil, organic chemicals, and alcohols. For approximately twenty years, the trucks that were used to transport the chemicals were washed on site, and the residue was placed in a large (approximately 0.69 acre by 1 foot) lagoon. Since 1981, residues from the trucks have been transported off site. Kauffman and Minter had also used a spraying system to enhance the evaporation of lagoon liquid, and have transported some of the lagoon material off site for disposal.

Although the lagoon has received NJPDES permit from the New Jersey Department of Environmental Protection (NJDEP), there have been a number of violations and problems associated with operation of the lagoon. The lagoon does not have a retention pond or sufficient freeboard. As a result, heavy rains have periodically caused the lagoon to overflow, or the lagoon dike to breach, contaminating a low lying area off site. The main concerns are that the lagoon is unlined, that groundwater in the area is shallow, and that homes in the area use groundwater for drinking and other household purposes.

Other things of concern on site include drums that were left rusting around the site, the pit area, nine under-ground storage tanks, and a drainage ditch. The drums presumably contained crankcase oil. The water-wash from the trucks was stored in the pit area before being pumped into the lagoon. The drainage ditch ran near the pit area and collected runoff from the site.

B. Site Visit

NJDOH personnel visited the site in April 1989. A number of concerns were noted including:

- * Unrestricted access to the site. No signs of trespassing or vandalism were observed. The only reported act of vandalism was the removal of straw barriers from the drainage ditch area.
- * The lagoon lacked 24 inches of freeboard.
- * The low-lying off-site area contained liquids. Although the liquid could be rainwater or groundwater, it appeared that much of the liquid is likely to have come from the lagoon.

- * A few rusted drums were observed in a pile near the side of the lagoon.
- * There was a slight chemical odor near the lagoon. It seemed that the odor was originating from the lagoon. Although a similar odor existed near the truck garage, it is unlikely that the odor was from garage operations, due to the distance between the garage and the lagoon.

NJDOH personnel revisited the site in July 1991. USEPA personnel were on-site, helping to remove lagoon liquids to transport them off-site by tanker truck. USEPA on-site coordinators said that all liquids are scheduled for removal, which will be the first phase of lagoon remediation.

A chain link fence extending around the facility structures and waste lagoon have restricted access to the site since the April 1989 site visit. Unauthorized access to contaminated areas is unlikely.

The facility is currently active. Waste liquids from the tanker cleaning process are being bulked by Kauffman and Minter, and stored in tanker trucks onsite. Although Kauffman and Minter at one time transported waste liquids to a nearby municipal water authority treatment facility for disposal, the ultimate destination for waste liquids contained by the observed tankers could not be confirmed by USEPA.

The low-lying area adjacent to the lagoon did not seem to be flooded with lagoon liquids. The ongoing reduction of the volume of liquid in the lagoon has reduced the possibility of berm failure and of overflow as a result of rain or snow.

C. Demographics, Land Use, and Natural Resources Use

Kauffman and Minter is in a mainly rural area; there are some homes along Route 537. The home closest to the site is approximately 500 feet from the lagoon. It is estimated that there are 184 homes within a 3-mile radius of the site. However, more homes and development are planned in the area.

Homes in the area use groundwater for drinking. The main aquifer of concern is the Wenonah-Mount Laurel aquifer. Approximately 80% of the homes within a 3-mile radius use the Wenonah-Mount Laurel aquifer for drinking water. (The Englishtown and Raritan--Magothy aquifers are also used). According to the Hazard Ranking Score, 139 homes (184 homes x 0.8) were identified as the target populations.

Most of the wells in the Jobstown area are over 100 feet deep. However, at least one shallow well (approximately 20 feet deep)

was identified in 1987. Many homes had switched from shallow wells to deep wells because the shallow wells were drying up. Farmland in the area is mostly used to grow corn and beans. Groundwater is not used to irrigate those crops.

No sensitive subpopulations (e.g., children, elderly) have been identified in site literature, nor were sensitive populations observed during the site visit.

D. State and Local Health Data

Based on the evaluation performed as part of this interim preliminary health assessment, there are no indications that humans have been exposed to site-related contaminants. In addition, there were no health outcomes of concern identified as part of this evaluation. Therefore, state and local health databases were not searched.

COMMUNITY CONCERNS

Some concerns have been raised by residents in the area about the possibility of drinking water contamination due to Kauffman and Minter. In 1987 and 1988, residents complained through Springfield Township and a United States Senator that their drinking water smelled, and that it was contaminated by the lagoon on Kauffman and Minter property. (NJDEP sampled some drinking water wells in 1989 and found no contamination attributable to the site).

The NJDOH and the NJDEP have received a number of inquiries from potential house buyers in the area who are concerned with the quality of the groundwater.

In November 1991, the Burlington County Health Department was contacted to determine additional community health concerns related to the site. The health department was not aware of any additional concerns besides those indicated above.

ENVIRONMENTAL CONTAMINATION AND PHYSICAL HAZARDS

To identify facilities that could possibly contribute to air, surface water, and ground water contamination around the Kaufmann and Minter site, ATSDR and NJDOH searched the 1987 and 1988 Toxic Release Inventory (TRI). TRI was developed by the USEPA from the chemical release information provided by certain facilities. TRI did not contain information on the toxic chemical release in Jobstown nor in the zip code area in which the site is located.

A. On-Site and Off-Site Contamination

Media sampled on site include soils, lagoon liquid, groundwater, pit sludge, pit sediment, drinking water wells, the drainage ditch, and the air. Contaminants have been detected in the soils, lagoon area, and pit area. To date, chemical contaminants have not been detected in the groundwater onsite, or in recent drinking well samples. Although analysis of recent samples from the drainage ditch did not detect contamination, the drainage ditch is visibly contaminated. At one time, straw was placed in the ditch to collect oil contaminants.

Chemicals in the lagoon liquids included bis- (2-chloroisopropyl) ether (28 ppb), benzoic acid (200 ppb), trans- 1,2-Dichloroethene (260 ppb), tetrachloroethene (170 ppb), toluene (120 ppb), ethylbenzene (750 ppb), styrene (470 ppb), xylenes (1,300 ppb), phenathrene (6,200 ppb), di-n-butylphthalate (55,600 ppb), endosulfan sulfate (141 ppb), DDT (43 ppb), chlorotoluene (103 ppb), and numerous phthalates and unidentified compounds.

Groundwater contaminants have not been detected in the three monitoring wells on site. This could be due to missing the plume (the exact direction of groundwater flow has not been clearly established), not running full priority pollutant scans on the groundwater, and/or the groundwater being protected by a thick clay layer. One boring identified 14 feet of clay (in the Navesink Marl) on the site. It is suspicious that one well has consistently had high Chemical Oxygen Demand (COD). The high COD readings could be due either to normal background concentrations or to the presence of contaminants. Comprehensive groundwater data are expected as a result of the present remedial investigation.

The only volatile organic chemical detected in the potable wells near the site was trichloroethylene at 27 ppb, in 1984. Although trichloroethylene was detected in the lagoon sediment at a very low concentration, it is likely that the concentration of trichloroethylene that was detected was not from the site, but from a local source such as a septic tank cleaner.

In 1989, samples of five potable wells, did not indicate any volatile organic chemical contamination. In addition, eight residential drinking water wells were sampled in March 1990. Those samples indicated the presence of eight metals and five organic compounds. Iron and manganese were the only chemicals detected above EPA's Primary or Secondary Maximum Contaminant Levels (MCL), and that were not considered laboratory contaminants. The maximum levels of iron was 16.8 mg/L and of manganese 16.8 mg/L and 0.160 mg/L. On March 28, 1990, ATSDR issued a health consultation (See Appendix 1) that concluded that the levels of iron and manganese at the site were not likely to pose a health threat and were probably not related to the contamination detected in the preliminary sampling at the site. Several phthalate esters were detected and maximum concentrations were estimated as high as 3 mg/L; however, phthalates are common laboratory contaminants and were reportedly found in the sample blanks. One sample also showed high levels of sodium (36 mg/L), which is probably attributable to the water softener at that residence.

Contaminants detected in the sludges and sediments of the pit area in 1986 included di-n-octyl phthalate (77,000 ppb), di-n-butyl phthalate (790 ppb), xylenes (11,000 ppb), ethylbenzene (9,800 ppb), 1,1,1-tri-chloroethane (12,000 ppb), and numerous unidentified compounds.

Chemicals detected in the on-site soil included trans-1,2-dichloroethylene, xylenes, DDT, and 2-methyl-naphthalene.

B. Environmental Data Gaps

The following site data and information needs are identified as desirable for the formulation of a comprehensive interim health assessment.

Additional groundwater samples and sampling locations are needed to accurately define groundwater movement and to ensure that previous sampling has not missed a contaminant plume. The installation of additional wells is planned but has not taken place due to issues of land ownership and problems with the driller. Depending on the results of groundwater analyses from the additional wells, further monitoring of drinking wells may be needed.

The low-lying area next to the lagoon needs to be sampled, to determine how much of that area has been contaminated by the lagoon. Soil samples around the piles that contain rusted drums, along with the sediment of the drainage ditch, will also require sampling to delineate contamination.

C. Quality Assurance and Quality Control

Analysis of samples collected by NJDEP was performed at the New Jersey Department of Health laboratories, and had to pass an internal quality assurance/quality control (QA/QC). Specific information relating to QA/QC is currently not available for review and evaluation.

PATHWAYS ANALYSIS

The primary exposure pathways at the site potentially are those associated with drinking and other domestic uses of contaminated groundwater, and with direct contact with on-site contaminants.

Due to limited sampling at the site, there are no data to substantiate suspected groundwater contamination. There have not been any reported incidences of direct contact by residents with lagoon materials on-site or in the adjacent low lying area, although such contact is possible due to the lack of security at the site. Workers on the site need to be advised to use precaution, if they come in direct contact with lagoon material.

PUBLIC HEALTH IMPLICATIONS

The degree of public health concern associated with the site's possible effects on area groundwater quality is difficult to quantify until the RI/FS Report is available for review and evaluation.

Direct contact with the lagoon material on-site or in the low lying area is a public health concern, and should be avoided. To date, there have not been any reports of adverse health effects associated with the site.

CONCLUSIONS AND RECOMMENDATIONS

ATSDR and NJDOH have judged this site an indeterminate public health hazard. The limited data and information available do not indicate that humans are being exposed or have been exposed to levels of contamination that one would expect to cause adverse health effects. However, data and information are not available for all environmental media to which humans may be exposed. Of particular concern is the possibility for human exposure to volatile organic chemicals and heavy metals, which may occur/be occurring and which may have occurred in the past, through drinking and other domestic use of contaminated groundwater, the possibility of past direct contact with on-site contaminants and lagoon materials is also of particular concern.

As indicated in the March 28, 1990, ATSDR Health Consultation, the following recommendations are warranted:

1. Continue to monitor well water for the presence of organic and inorganic chemical contamination. Sampling indoor taps instead of outdoor taps is suggested to obtain a more representative picture of possible exposure. Verify that phthalates were present as a laboratory contaminant.
2. Advise those drinking the water that showed high levels of sodium to determine if their water softener is a contributor to the sodium in their water.
3. If residents are concerned about the color and odor of the water, they should be advised that properly installed filters can likely correct the problem.

There are a number of other activities that need to take place at the site to protect the public health, specifically:

- * The lagoon, and possibly part of the low-lying area, need to be fenced to ensure that trespassers or children do not come in contact with the lagoon material. Based on the observations of the July 1991, site visit, the facility and the lagoon have been fenced.
- * The removal of liquid and sediment from the lagoon needs to be expedited, so that it no longer poses a direct contact threat, and is no longer a potential source for groundwater contamination. Because of the installation of the fence, the direct contact threat to lagoon liquids and sediment has been reduced.
- * To ensure that further flooding of the low-lying area does not occur before the lagoon material can be removed, a retention pond needs to be constructed and additional freeboard needs to be installed around the lagoon.


If additional evaluations indicate that a completed exposure pathway exists or a particular health outcome is of concern to the community, then health outcome data will be collected and evaluated in future assessments for this site.

The Kauffman and Minter site, Jobstown, New Jersey, has been evaluated by ATSDR's Health Activities Recommendation Panel for appropriate follow-up regarding health activities. This site is not being considered at this time for follow-up activities because no present or past pathway of exposure to site contaminants can be defined, based on the currently available data relevant to the site. However, if data needs identified in this interim health assessment or other data become available

suggesting that human exposure to significant levels of hazardous substances is currently occurring, or that it has occurred in the past, ATSDR and NJDOH will reevaluate this site for any indicated follow-up.

CERTIFICATION

This interim health assessment was prepared by the under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the interim health assessment was initiated.


Technical Project Officer, SPS, RPB, DHAC

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


Division Director, DHAC, ATSDR

REFERENCES

Superfund Documents:

NJDEP, NJPDES Permit Number NJ0032310.

NJDEP, Hazardous Waste Investigation, 1982.

USEPA, Documentation Records for Hazard Ranking System, 1987.

USEPA, Site Inspection Report, 1985.

File Reviews:

NJDEP, Division of Hazardous Waste Management.

NJDEP, Division of Water Resources.

Interviews:

NJDEP, Case Manager, Division of Water Resources.

NJDEP, Central Region Enforcement.

APPENDIX 1



Memorandum

Date March 28, 1990

From Toxicologist, Emergency Response and Consultation Branch (ERCB)
Division of Health Assessment and Consultation (DHAC), ATSDR (E32)

Subject Health Consultation: Kauffman and Mintzer, Inc. NPL Site
Springfield Township, Burlington County, New Jersey
CERCIS NO. 02NJD002493054

To William G. Nelson
ATSDR Regional Representative
EPA Region II
Through: Chief, ERCB, DHAC, ATSDR (E32) **EKS**

BACKGROUND AND STATEMENT OF ISSUES

The Agency was asked by the Environmental Protection Agency (EPA), Region II, to review analytical results of groundwater samples taken from outside taps at eight residences near the Kauffman and Mintzer, Inc. National Priorities List Site and to comment on the public health significance of the contaminant levels. The consistently elevated levels of iron (up to 15.8 mg iron per liter water; parts per million, [ppm]) and manganese up to 0.160 ppm, that were detected in these wells were of greatest concern. These levels exceeded EPA's secondary MCLs for the elements which are 0.3 ppm and 0.05 ppm, respectively. One sample (#098729) showed high levels (36 ppm) of sodium which are probably attributable to the water softener that was present. Several phthalate esters were detected; maximum concentrations were estimated to be as high as 3 ppm. No data were provided to indicate what the depth was of these wells or the aquifer being sampled.

Kauffman and Mintzer, Inc. is an active 5-acre site. Activities at the site are related to bulk chemical transportation. A Draft Preliminary Health Assessment was submitted to ATSDR by the State in May 1989, under the terms of a cooperative agreement. Several metals (lead and cadmium) and organic chemicals, including several phthalate esters, were the substances that were the primary concern. There are about 184 homes within a 3-mile radius of the site, the closest about 500 feet from contaminated on-site areas. Homes in the area use groundwater for potable purposes.

In 1987 and 1988, area residents complained that their drinking water smelled and they feared that the water was contaminated because of the site. According to the Draft Preliminary Health Assessment some sampling was done in 1989 that indicated that local wells were not contaminated. Most wells were reported to be screened in deep aquifers.

DOCUMENTS AND INFORMATION REVIEWED

1. New Jersey Draft Preliminary Health Assessment, Kauffman and Mintzer, Inc., May 8, 1989.
2. Analytical Results on Kauffman and Mintzer Residential Drinking Water Samples, transmitted by memorandum from Amy Brochu, Edison Project Manager to Maggie Braville, New York Project Manager, March 20, 1989 (faxed to ATSDR March 22, 1990).
3. Memorandum from D. Killian, EPA Region II, to Richard Spear, EPA Region II, Re: Groundwater samples (organic, cyanide, matrix effects and pesticides), March 20, 1989 (faxed to ATSDR, March 22, 1990).
4. Drinking Water and Health, pp. 265-270, MAS, 1977.
5. Casartat and Doull's Toxicology, 3rd ed. 1984, pp. 613-615.
6. The Pharmacological Basis of Therapeutics (Goodman & Gilman), 7th ed., 1985, Chapter 56.
7. Conference Call, March 22, 1990. Participants: Allan Sustan, Ph.D. (ATSDR, Toxicologist), Lynn Wilder (ATSDR Environmental Health Scientist), Bill Nelson (ATSDR Region II Representative).
8. ATSDR Draft Toxicological Profile for Di-n-butylphthalate, February 1990.
9. ATSDR Toxicological Profile for Di(2-ethylhexyl)phthalate (ATSDR/TP-88/15), April 1989.

DISCUSSION

Except for the concentrations of metals noted above and possibly the phthalates, the samples showed no indication of contamination. The phthalates were the same as those detected on-site at the Kauffman and Mintzer Site, but may not be site-related. Indeed, phthalates are common laboratory contaminants and were reportedly found in sample blanks. The elevated levels of sodium detected in the one sample could pose a problem to persons with cardiovascular and kidney disease. The elevated levels of iron and manganese do not appear to be related to the contamination detected in the preliminary sampling at the site.

The levels of manganese detected in the samples are not likely to represent a health hazard. The main problem with such levels of manganese in drinking water is therefore related to the taste and discoloration it imparts to the water. Manganese is an essential trace nutrient for many organisms, including mammals, and has a very low order of acute oral toxicity. Chronic manganese poisoning is almost always the result of inhaling high concentrations of manganese-containing dusts as a result of occupational exposures. Chronic manganese poisoning produces symptoms that resemble Parkinson's disease.

Similarly, the iron levels detected in the samples, although above EPA secondary standards, are unlikely to cause adverse health effects in most individuals. Certain individuals, because of a genetic defect, will absorb excessive amounts of iron from the intestinal tract. In most cases, iron absorption is well regulated. The presence of manganese tends to interfere with iron absorption.

CONCLUSIONS

Based on available information, the ATSDR concludes that the levels of iron and manganese at the site are not likely to pose a health threat.

RECOMMENDATIONS

1. Continue to monitor well water for the presence of organic and inorganic chemical contamination. Sampling at indoor taps as opposed to outdoor taps is suggested to obtain a more representative picture of possible exposures. Verify that phthalates were present as a laboratory contaminant.
2. Advise those drinking the water that showed high levels of sodium to check the water softener.
3. If residents are concerned about the color and odor of the water, they should be advised that properly installed filters can likely correct the problem.



Allan S. Susten, Ph.D., DABT