File 4840
Hiteman

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180 –2216

Antonia Novella, M.D., M.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

November 5, 2001

Dear Interested Party:

Enclosed is a copy of the final version of the Public Health Assessment for the **Hiteman Leather** inactive hazardous waste site in Herkimer County, New York. This document was developed by the New York State Department of Health (NYS DOH), in cooperation with the U. S. Agency for Toxic Substances and Disease Registry (ATSDR). The purpose of the health assessment is to evaluate whether the Hiteman Leather site represents a health hazard to the residents of the area. A draft of this document was distributed to the public for comment in July 2000. The NYS DOH received comments from interested parties and has addressed those comments. A compilation of the comments with their responses are in Appendix D of the Health Assessment. At this time, the document is considered final and will not be reissued unless new and substantial information and data are submitted that warrant re-evaluation.

For any additional questions or to obtain additional copies of the Health Assessment, please do not hesitate to contact me at the toll-free number, 1-800-458-1158, extension 27530.

Sincerely,

Mark A. VanDeusen
Outreach and Education Unit
New York State Department of Health

Enclosure

New York State Department of Health
Center for Environmental Health

Public Health Assessment

HITEMAN LEATHER SITE

Village of West Winfield,
Herkimer County, New York

December 26, 2000 Cerclis No. NYD981560915

Prepared under a Cooperative Agreement with

U.S. Department of Health & Human Services
Public Health Service
Agency for Toxic Substances and Disease Registry

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SUMMARY

The Hiteman Leather site is a former commercial tannery at 173 South Street (New York State Route 51) in the Village of West Winfield, Herkimer County. The village is about 20 miles south of Utica and 100 miles west of Albany, New York. Historical records indicate that various tanneries operated at the site from 1820 until 1968. Also, the site was used by a machine shop, a tire recapping company and a cookie company. Process waste from the facility was discharged to a series of unlined waste lagoons. Untreated effluent from the lagoons was allowed to flow into the Unadilla River and an on-site wetlands. The solids which settled and accumulated in the lagoons were periodically excavated and deposited in other areas on the site. The waste lagoons were allowed to drain and were filled with soil. However, visibly stained soils and analytical data indicate that significant levels of chromium, antimony and arsenic remain in soil. Low level groundwater, surface water and sediment contamination with chromium is also documented.

The Unadilla River, which borders the site, is a popular recreation site. An upstream waterfall and town park (less than 0.25 miles away) encourage use of the river near the site. The banks of the Unadilla River were stabilized to reduce erosion from the site and reduce contaminant migration. The physical hazards related to former structurally unsafe buildings were reduced when the buildings were removed; however, some debris remain on-site. The perimeter site fence appears to be effectively restricting access to on-site contaminants. The area surrounding the site and the village are served by public drinking water that is obtained from groundwater wells. While not likely to be affected by site contaminants, public water was sampled in 1997 and the water did not contain site-related contaminants. The New York State Department of Health (NYS DOH) requires that the public water supply wells be sampled for metals every three years. The closest private well is 500 feet across the Unadilla River from the site. This well was sampled in 1986, 1990 and 1999 and was not contaminated. A cemetery that is adjacent to the site has a well that was damaged in 1991 and has not been used since. If the well is reactivated, NYS DOH staff will sample the water for site-related compounds.

Nearby residents expressed concern about possible exposure to contaminated surface soil, groundwater, sediments, surface water and fish in the Unadilla River and about on-site physical hazards. This public health assessment was made available for public review in July 2000, and a summary of these comments and NYS DOH responses are presented in Appendix D. On-site contamination and physical hazards are addressed by the existing access restrictions which minimize potential exposure. Off-site contamination, including the Unadella River, is below health comparison values.

Based on the information reviewed and the current site conditions, there are no known significant exposures. Thus, the site is categorized as no apparent public health hazard (Appendix C). Although there are currently no completed exposure pathways of public health concern at this site, exposures in the future are possible, should contaminants at the site be made available for human exposure without remediation. The potential migration of on-site contamination to the Unadilla River and sediments should continue to be monitored. In the absence of site remediation, site access restrictions must be maintained and controls on future use implemented.

BACKGROUND

Under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), the New York State Department of Health (NYS DOH) will evaluate the public health significance of the Hiteman Leather site in this document. More specifically, ATSDR and NYS DOH will determine whether health effects are possible and will recommend actions to reduce or prevent possible health effects. The ATSDR is a federal agency within the U.S. Department of Health and Human Services and is authorized by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, to conduct public health assessments at hazardous waste sites proposed for the National Priorities List (NPL). The Hiteman Leather site was proposed to the NPL in September 1998 and was placed on the NPL in 1999.

A. Site Description and History

The Hiteman Leather site is on 173 South Street (NYS Route 51) in the Village of West Winfield (Figure 1). Various tanneries operated at the site from about 1820 to 1968. Also, the site was used by a machine shop, a tire recapping company and a cookie company. The site covers over 14 acres. It is bordered to the south by the Unadilla River, to the west by the West Winfield Cemetery, to the north by several private residences and small businesses and to the east by South Street. The site includes a two acre wetland, a section of the Unadilla River and a large open area. The open area was occupied by several storage and production buildings as well as three waste water lagoons. There currently is no surficial evidence of the former lagoons. The buildings were demolished under the guidance of United States Environmental Protection Agency (US EPA) in 1996 and 1998. A sketch of the site is included as Figure 2.

The waste stream generated at the facility mirrored changes in technology. The vegetable-based tanning solutions originally used were replaced by acid solution, mineral based (chromium salts) products. The chemical processing changes lessened the time required for leather tanning, but created the wastes which are now the focus of this report.

The waste waters generated by the facility were discharged to two unlined lagoons. The solids were allowed to settle and the untreated liquids were allowed to overflow into the adjacent Unadilla River and onsite wetlands. Periodically, the solids were excavated and used as fill around the banks of the lagoons. In 1959, there was a large fish kill in the Unadilla River adjacent to the facility. An investigation determined that the event was caused by an overflow from the waste lagoons. Thus, a third lagoon was built to increase the waste water retention times.

B. Site Visit

NYS DOH staff visited the site on several occasions. A site visit in March of 1999 confirmed that a perimeter fence was in place and effectively deterring site trespass. Staff also witnessed that the unsafe on-site structures had been demolished, but that some debris remained. A single fisherman was in the waterfalls area of Unadilla River, approximately 0.2 miles upstream of the site. In

December 1999, staff collected a water sample from the nearest private well.

C. Demographics, Land Use and Natural Resources

Demographics

The NYS DOH estimated from the 1990 Census (US Bureau of the Census 1991) that 975 people live within one mile of the site. This population is 99.5% white. The percent of persons of Hispanic origin is less than 1%. Based on the 1990 census, 8.1% of the population is under 6 years of age, 21.7% is 6-19 years of age, 53.1% is 20-64 years of age, and 17.1% is 65 years or older. In 1990 there were 183 females of reproductive age (ages 15-44) in the area. The median household income for the area was $27,338 in 1989, with 8.9% of the population living below the poverty level (US Bureau of the Census 1992). The following chart compares these demographics with statewide averages. There are several schools and a senior housing complex in the area.

	New York State	Area within 1 mile of site
Age Distribution		
<6	8.3%	8.1%
6-19	18.4%	21.7%
20-64	60.2%	53.1%
>64	13.1%	17.1%
Race Distribution		
White	74.4%	99.5%
Black	15.9%	<1%
Asian	3.9%	<1%
Other	5.8%	<1%
Ethnicity Distribution		
Percent Hispanic	12.3%	<1%
1989 Median Income	$32,965	$27,338
% Below Poverty Level	13.0%	8.9%

Land Use

The site is in a semi-rural area of Herkimer County. The site and neighboring properties are zoned for industrial, commercial and residential uses. About 150 homes are within 1/2 mile of the site. The Unadilla River is on the southern border of the site. A village park is less than 1/2 mile to the east.

Natural Resources

The Unadilla River is used for fishing, swimming and wading. People fish and wade in the river upstream and adjacent to the site. Groundwater is used by the Village of West Winfield's public water supply. Their supply wells are about 0.3 miles upgradient (northeast) of the site. A groundwater well previously used for irrigation in the neighboring West Winfield Cemetery has been damaged and unused since 1991. The nearest private well is 500 feet across the Unadilla River from the site and is unlikely to be affected by the site because of the groundwater separation provided by the river.

COMMUNITY HEALTH CONCERNS

Local residents expressed concerns about the following:

- Consumption of fish caught from the Unadilla River near the site.
- Potential health effects from exposure to contaminated surface soils.
- Potential groundwater contamination.
- Contamination of sediment and surface waters of the Unadilla River.
- The structural integrity and physical hazards presented by the former on-site buildings.

The discussion which follows addresses these community concerns. Also, the public was invited to review this public health assessment during the public comment period in July 2000. A summary of the comments and NYS DOH responses are included as Appendix D.

ENVIRONMENTAL CONTAMINATION AND OTHER HAZARDS

The environmental data in this section were gathered during several investigations, primarily in 1992 (SAIC Engineering, Inc. 1992) and in 1994 and 1996 (US EPA 1999). The primary contaminant of concern (chromium) was identified in surface soils, subsurface soils, groundwater, surface water and river sediments. However, samples were analyzed for other chemicals potentially related to former site uses, including solvents and metals. Antimony and arsenic were also elevated in on-site surface soil. Chromium was primarily found in the trivalent form. This form is generally less toxic than the hexavalent form. The following sections summarize the results of the investigations on the Hiteman Leather site.

A. On-Site Contamination

Surface and Subsurface Soils

Total chromium levels in on-site surface soils, identified in the Remedial Investigation (RI/FS) (SAIC Engineering, Inc. 1992), ranged from non-detect to about 120,000 milligrams per kilogram (mg/kg). Soil samples which were analyzed for total chromium and hexavalent chromium show that the primary contaminant is trivalent chromium; hexavalent chromium is less than 0.1 percent

of total chromium. The highest level of trivalent chromium was detected in soils near the wetlands. According to the proposed remedial action plan, chromium contamination above 200 mg/kg was generally limited to the upper six feet of soil. In general, chromium levels in soils decreased with depth.

In November 1994, 32 surface soil samples were collected in the wetlands and lagoon areas of the site (historically the most contaminated areas). The samples were taken from soil at zero to six inches below ground surface after the removal of any surface vegetation. The samples were analyzed via portable x-ray fluorescence, and a portion of these samples were sent to a laboratory for confirmatory analysis. Total chromium levels in these surface soil samples ranged from 8 to 103,000 mg/kg. Also during this sampling, antimony was detected in surface soil at levels up to 1880 mg/kg and arsenic was detected at levels up to 96 mg/kg. These levels of chromium, arsenic and antimony were detected in the most highly contaminated areas and are above background and health comparison values.

The US EPA collected 210 soil samples in June 1996 to delineate the extent of chromium contamination at the site. The US EPA soil samples contained chromium to a depth of ten feet below grade at concentrations as high as 75,000 mg/kg. The highest concentrations of chromium were in soils near the former lagoon area. Toxicity characteristic leaching procedure (TCLP) analyses performed on 17 of the 210 soil samples did not find chromium at levels above the hazardous substance regulatory limits. Hexavalent chromium was detected in 5 out of 25 soil boring samples analyzed for metals. Hexavalent chromium ranged from 0.10 to 1.9 mg/kg (average: 0.58 mg/kg) and total chromium ranged from 17.9 to 44,800 mg/kg (average: 2,230 mg/kg). In all cases hexavalent chromium was less than 0.1 percent of total chromium.

Groundwater

The highest level of chromium in unfiltered groundwater samples was 14,600 micrograms per liter (mcg/L), a value that exceeds the NYS DOH drinking water standard of 100 mcg/L. However, filtered groundwater samples collected at the same time did not contain chromium levels above drinking water standards and only 2 of the 21 filtered groundwater samples collected by the US EPA in 1996 contained chromium (at levels below the public drinking water standard). Antimony and arsenic were not detected at levels above health comparison values in the water samples. On-site groundwater is unlikely to affect existing private wells because they are not in the direction of groundwater flow or are separated by the Unadilla River. Exposure to on-site groundwater is possible should wells be installed and untreated water used on-site.

B. Off -Site Contamination

Surface Soil

No off-site surface soil samples were collected during the site investigations. However, on-site surface soil sampling defined the extent of soil contamination, none of which extended to the site

boundaries. Also, any contamination that might have resulted from stormwater runoff would move into the river, where sampling was done. No off-site wetlands are affected by the site.

Groundwater

Public drinking water in the Village of West Winfield is supplied by wells that are about 1500 feet northeast of the site, in the opposite direction of groundwater flow. These wells were last sampled in 1997 and have not been affected by the Hiteman Leather site. NYS DOH requires sampling for metals analysis every three years. The area surrounding the site is supplied by this public water supply. The closest private well is across the Unadilla River, about 500 feet south of the site. The Unadilla River is a groundwater divide, so this well is unlikely to be affected by the site. This well was sampled in 1986, 1990 and 1999, and was not contaminated. No further sampling of this well is planned unless new information warrants additional sampling. A cemetery that is adjacent to the site has a well that was damaged in 1991 and has not been used since. If the well is reactivated, NYS DOH staff will sample the water for site-related compounds.

Surface Water

The data in the RI/FS (SAIC Engineering Inc., 1992) do not indicate significant surface water contamination. Chromium was detected at 33 mcg/L in one out of three unfiltered surface water samples collected by the US EPA in 1996. This surface water sample was collected from the Unadilla River near the wetland area.

Sediments

Contamination in the river sediments may be associated with past disposal activities and/or contaminant migration from the Hiteman site. The highest level of chromium (6,900 mg/kg) in the sediment was in a river sediment sample collected along the northern bank of the Unadilla River, near the contaminated wetland sediments and soils. Downstream sediment samples had lower concentrations of chromium (20 to 135 mg/kg). In addition, flooding and erosion could increase contamination of surface water and river sediments.

Fish

A recent study found that about one fourth of crayfish sampled had detectable levels of chromium, with a maximum of 6.1 mg/kg. Hexavalent chromium in biological systems is reduced to trivalent chromium in the bodies of animals (ATSDR 1998), therefore, any chromium in fish or shellfish is likely to be in the less toxic trivalent form. The maximum level does not exceed public health comparison values for chromium in fish and shellfish. This pathway is eliminated from further consideration.

C. Physical and Other Hazards

Some demolition debris remains on-site from the 1998 building razing. This debris would be a

hazard to site trespassers if access restrictions are not maintained.

PATHWAY ANALYSIS

This section of the public health assessment (PHA) identifies potential and completed exposure pathways associated with past, present and future use of the site. An exposure pathway is the process by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: (1) a contaminant source; (2) environmental media and transport mechanisms; (3) a point of exposure; (4) a route of exposure; and (5) a receptor population.

The source of contamination is the source of contaminant release in the environment (any waste disposal area or point of discharge); if the original source is unknown, it is the environmental media (soil, air, biota, water) which are contaminated at the point of exposure. Environmental media and transport mechanisms carry contaminants from the source to points where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (i.e., ingestion, inhalation, dermal absorption). The receptor population is the persons who are exposed or may be exposed to contaminants at a point of exposure.

Two types of exposure pathways are evaluated in the PHA; a completed exposure pathway exists when the criteria for all five elements of an exposure pathway are documented; a potential exposure pathway exists when the criteria for any one of the five elements comprising and exposure pathway is not met. An exposure pathway is considered to be eliminated when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future.

A. Completed Exposure Pathways

There are no current completed exposure pathways related to site contaminants. A fence precludes access to areas of contamination. Private and public drinking water wells are not believed to be in areas potentially affected by contamination and sampling has confirmed that they are not contaminated.

B. Potential Exposure Pathways

Surface Soils

The extent to which past exposures to contaminated soils on-site may have occurred is unknown. Workers and trespassers at the site, prior to the installation of the site perimeter fencing in December 1994, were potentially exposed to contaminants in on-site soils via incidental ingestion, direct contact and inhalation of soil particulates. Although the site is now fenced and access is limited, the fence needs to be maintained to continue to restrict access in the future. Future

exposures to contaminants in on-site soil may occur if the site is not remediated and access is not restricted.

Sediments

Exposure to chromium contamination in sediments may occur by dermal contact and incidental ingestion during recreational activities such as wading or fishing. Chromium up to 6,900 mg/kg in sediments are below health comparison values, since little of the chromium is in the hexavalent form, and will not be further discussed. However, if additional site contaminants are allowed to migrate this potential pathway may become a greater health concern. The banks of the Unadilla River were stabilized under the direction of US EPA, which should reduce erosion and contaminant migration into the river.

Groundwater

Although chromium was found in unfiltered water samples, it was not detected at levels above health comparison values in filtered water samples. This suggests that chromium in the samples from the monitoring wells is in suspended sediments, not in the groundwater itself. However, because there are no current exposures and there are no potential exposures in the direction of groundwater flow, this potential exposure pathway is eliminated from further consideration.

Surface Water

Like the river sediments, current contaminant levels are below health comparison values. However, if additional contamination is allowed to migrate off-site, this exposure pathway may need to be re-evaluated.

PUBLIC HEALTH IMPLICATIONS

To evaluate the potential health risk from contaminants of concern associated with the Hiteman Leather site, the NYS DOH assessed the risk for cancer and noncancer health effects. The risk of health effects depends primarily on contaminant concentration, exposure route, exposure frequency and duration. Additional information on the NYS DOH assessment of the toxicological implications for this site is in Appendix B. Although there are currently no completed exposure pathways at this site, we evaluated potential exposures in the past in surface soils and the potential for exposure in the future, should contaminants at the site be made available for human contact without remediation.

Chromium was detected in on-site surface soil at levels as high as 120,000 mg/kg. The extent to which workers or trespassers at the site were exposed to contaminants in surface soil prior to the installation of the site perimeter fencing (December, 1994) is unknown. The primary toxic effects associated with ingestion of large amounts of chromium are kidney damage, birth defects and adverse effects on the reproductive system (ATSDR, 1998). In general, trivalent chromium is less toxic than hexavalent chromium. Although the risks of noncarcinogenic effects from incidental

ingestion of chromium-contaminated surface soil are not completely understood, the existing data suggest they would be minimal for both on-site workers and trespassers who may have been exposed in the past or may be exposed in the future to trivalent chromium (the predominant form of chromium at the site). Toxicological data are inadequate to assess the carcinogenic potential of trivalent chromium (US EPA 1999). Dermal exposure to high levels of hexavalent or trivalent chromium has resulted in allergic reactions, particularly to people who are very sensitive to chromium. These allergic reactions are characterized by redness and swelling of the skin (ATSDR, 1998). The existing data obtained from the Hiteman Leather site suggest that dermal exposure to chromium-contaminated on-site soil could cause allergic skin reactions in some workers and trespassers.

Workers and trespassers may have been exposed in the past to elevated levels of antimony in surface soil. The primary health effects associated with exposure to high amounts of antimony are disturbances of the gastrointestinal tract (such as abdominal pain, diarrhea, vomiting and ulcers), altered electrocardiogram (heart) readings, and increased blood pressure (ATSDR, 1992). The existing data suggest that past exposure to the highest levels of antimony found in soils (1880 mg/kg) would pose a low increased risk for noncarcinogenic health effects to trespassers or workers. Toxicological data are inadequate to assess the carcinogenic potential of antimony (ATSDR, 1992).

Arsenic is a known human carcinogen (ATSDR, 1993). Studies of people exposed to high levels of arsenic in drinking water in foreign countries provide evidence of an association between arsenic ingestion and skin cancer. Currently, there is a debate within the scientific community about US EPA's quantitative estimates of risk (ATSDR 1993). The existing data suggest that chronic exposure in the past to the highest levels of arsenic found in surface soils (78 mg/kg) would pose a low increased risk to trespassers or on-site workers. Noncarcinogenic risks for arsenic would be minimal.

There are currently no known exposures to chromium, antimony or arsenic in soil at the Hiteman Leather site. However, the potential for increased risk of adverse health effects exists for people that may be exposed in the future, should site conditions change so that soils becomes available for human contact.

HEALTH OUTCOME DATA

There are currently no significant exposures to the community living near the site. For this reason, the NYS DOH has not evaluated health outcome data specifically for the site and there are no community health studies planned at this time. However, the NYS DOH maintains several health outcome databases, which could be used to generate site-specific data if warranted in the future. These databases include the cancer registry, the congenital malformations registry, the occupational lung disease registry, vital records (birth and death certificates) and hospital discharge data information.

ATSDR CHILD HEALTH INITIATIVE

The ATSDR Child Health initiative emphasizes the ongoing examination of relevant child health issues in all of the agency's activities, including its mandated public health assessment activities. The ATSDR and NYS DOH considers children when we evaluate exposure pathways and potential health effects from environmental contaminants. We recognize that children are of special concern because of their greater potential for exposure from play and other behavior patterns. Children sometimes differ from adults in their susceptibility to hazardous chemicals, but whether there is a difference depends on the chemical. Children may be more or less susceptible than adults to health effects, and the relationship may change with developmental age.

The Hiteman Leather site is near recreational waters, a public park and a residential neighborhood. A perimeter fence prevent children from access to on-site contamination. Potential exposures to site contaminants off-site were evaluated further in earlier sections.

CONCLUSIONS

On-site workers and trespassers may have been exposed to site contaminants in the past; the existing data suggest the risk for noncarcinogenic health effects would be low for exposure to antimony and minimal for arsenic in soils. Also, the risk for carcinogenic health effects would be low for exposure to arsenic in soil. Toxicological data are inadequate to assess the carcinogenic potential of trivalent chromium and antimony. However, dermal exposure to chromium-contaminated on-site soil may have caused allergic skin reactions in some workers and trespassers. The extent to which workers or trespassers at the site were exposed to contaminants in surface soil prior to the installation of the site perimeter fencing is unknown. Therefore, the site presented an indeterminate public health hazard in the past. Contaminants in soil at the site could present a public health concern if the site is not remediated and land use changes to make contaminants available for human exposure. A fence around the site has reduced the potential for current and future exposures. Therefore, based on ATSDR Public Health Hazard Classification (Appendix C), the Hiteman Leather site presents no apparent public health hazard.

RECOMMENDATIONS

1. The site fence must be maintained to reduce access as long as contaminants remain on-site.

2. Actions, such as institutional controls, should be implemented to preclude changes in site use which could expose people to site contaminants.

3. Existing building debris should be removed to further reduce physical hazards and the attractiveness of the site to trespassers.

4. A long-term monitoring program should be developed to evaluate potential off-site contaminant migration through groundwater and runoff to the Unadilla River.

PUBLIC HEALTH ACTION PLAN

Actions Completed During the Public Health Assessment Process:

1. Although public and private drinking water supplies are not downgradient of the site, NYS DOH sampled the wells for site-related contaminants. None were detected.

2. A fence was built around the site by US EPA in 1994. Maintenance repairs were completed in 1996.

3. The US EPA directed the demolition of structurally unsound buildings in 1996 and 1998.

4. The US EPA stabilized the north bank of the Unadilla River in 1996. Approximately 500 linear feet of rip rap was installed.

Public Health Actions Planned

1. The NYS DOH and the ATSDR will coordinate with the appropriate agencies regarding actions to be taken in response to the recommendations provided in this report.

2. The NYS DOH will evaluate the public water supply sampling results for metals every three years. The closest private well, which is 500 feet across the Unadilla River, will not be resampled unless new information warrants additional sampling.

CERTIFICATION

This Public Health Assessment was prepared by the New York State Department of Health 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 Public Health Assessment was begun.

Gregory V. Ulirsch
Technical Project Officer
Superfund Site Assessment Branch (SSAB)
Division of Health Assessment and Consultation (DHAC)
ATSDR

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

Richard Gillig
Chief, SSAB, DHAC, ATSDR

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APPENDIX A

Figures

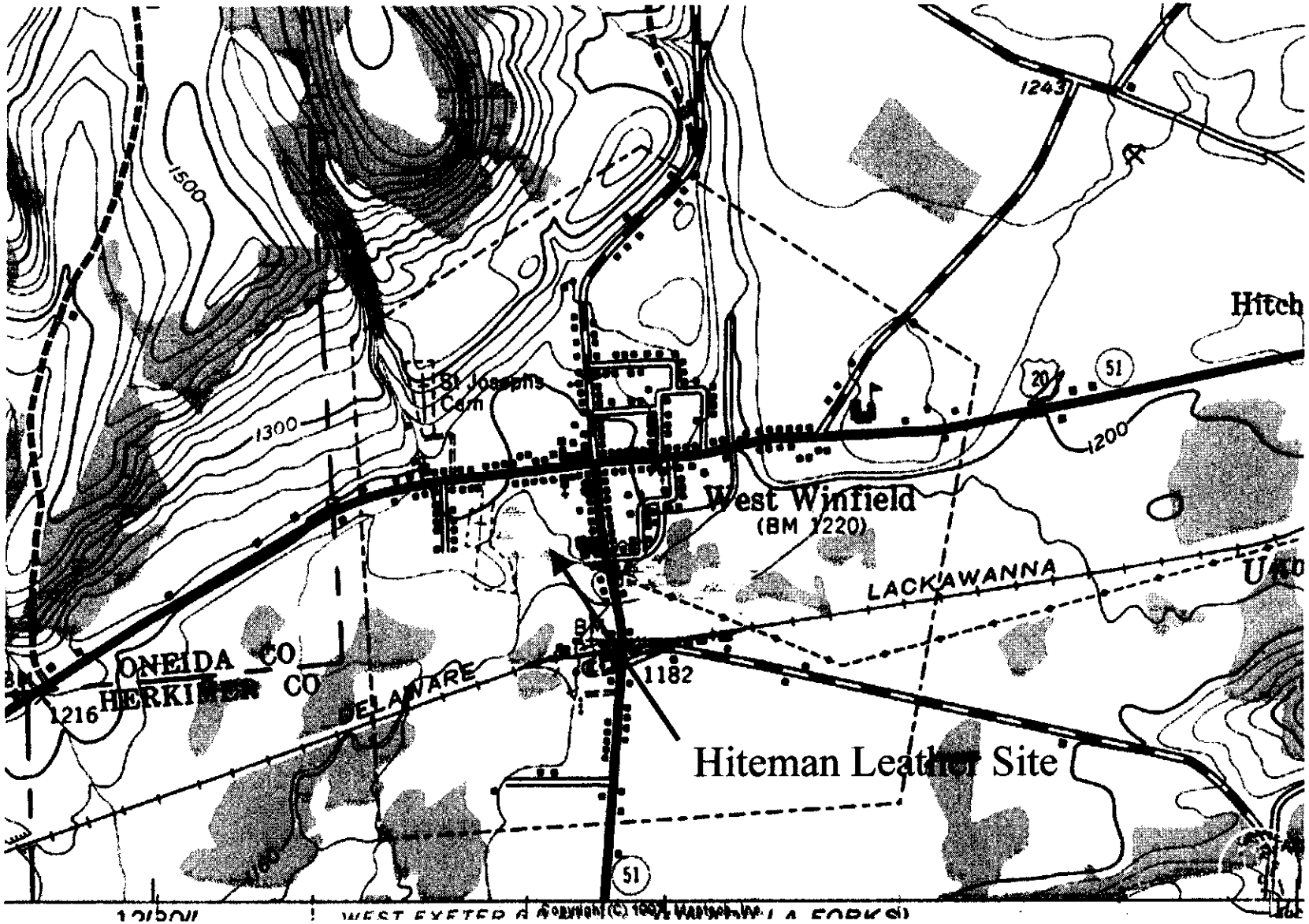
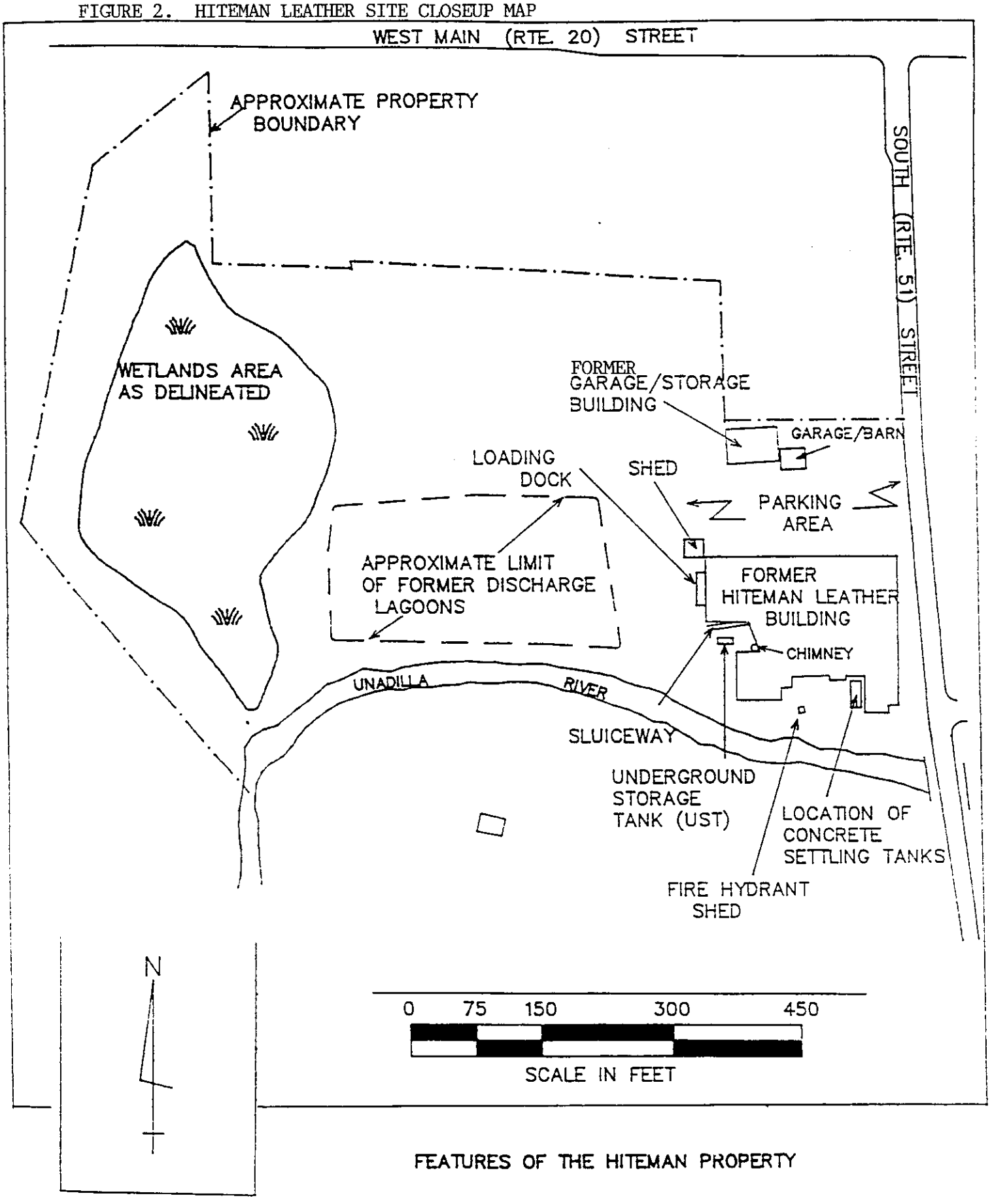


Figure 1. Hiteman Leather Site Regional Map

FIGURE 2. HITEMAN LEATHER SITE CLOSEUP MAP



FEATURES OF THE HITEMAN PROPERTY

APPENDIX B

New York State Department of Health
Procedure for Evaluating Potential Health Risks for
Contaminants of Concern

NYS DOH PROCEDURE FOR EVALUATING POTENTIAL HEALTH RISKS FOR CONTAMINANTS OF CONCERN

To evaluate the potential health risks from contaminants of concern associated with the Hiteman Leather site, the New York State Department of Health assessed the risks for cancer and noncancer health effects.

Increased cancer risks were estimated by using site-specific information on exposure levels for the contaminant of concern and interpreting them using cancer potency estimates derived for that contaminant by the US EPA or, in some cases, by the NYS DOH. The following qualitative ranking of cancer risk estimates, developed by the NYS DOH, was then used to rank the risk from very low to very high. For example, if the qualitative descriptor was "low", then the excess lifetime cancer risk from that exposure is in the range of greater than one per million to less than one per ten thousand. Other qualitative descriptors are listed below:

Excess Lifetime Cancer Risk

Risk Ratio	Qualitative Descriptor
equal to or less than one per million	very low
greater than one per million to less than one per ten thousand	low
one per ten thousand to less than one per thousand	moderate
one per thousand to less than one per ten	high
equal to or greater than one per ten	very high

An estimated increased excess lifetime cancer risk is not a specific estimate of expected cancers. Rather, it is a plausible upper bound estimate of the probability that a person may develop cancer sometime in his or her lifetime following exposure to that contaminant.

There is insufficient knowledge of cancer mechanisms to decide if there exists a level of exposure to a cancer-causing agent below which there is no risk of getting cancer, namely, a threshold level. Therefore, every exposure, no matter how low, to a cancer-causing compound is assumed to be associated with some increased risk. As the dose of a carcinogen decreases, the chance of developing cancer decreases, but each exposure is accompanied by some increased risk.

There is general consensus among the scientific and regulatory communities on what level of estimated excess cancer risk is acceptable. An increased lifetime cancer risk of one in one million or less is generally not considered a significant public health concern.

For noncarcinogenic health risks, the contaminant intake was estimated using exposure assumptions for the site conditions. This dose was then compared to a risk reference dose (estimated daily intake of a chemical that is likely to be without an appreciable risk of health effects) developed by the US EPA, ATSDR and/or NYS DOH. The resulting ratio was then compared to the following qualitative scale of health risk:

Qualitative Descriptions for
Noncarcinogenic Health Risks

Ratio of Estimated Contaminant Intake to Risk Reference Dose	Qualitative Descriptor
equal to or less than the risk reference dose	minimal
greater than one to five times the risk reference dose	low
greater than five to ten times the risk reference dose	moderate
greater than ten times the risk reference dose	high

Noncarcinogenic effects unlike carcinogenic effects are believed to have a threshold, that is, a dose below which adverse effects will not occur. As a result, the current practice is to identify, usually from animal toxicology experiments, a no-observed-effect-level (NOEL). This is the experimental exposure level in animals at which no adverse toxic effect is observed. The NOEL is then divided by an uncertainty factor to yield the risk reference dose. The uncertainty factor is a number which reflects the degree of uncertainty that exists when experimental animal data are extrapolated to the general human population. The magnitude of the uncertainty factor takes into consideration various factors such as sensitive subpopulations (for example, children or the elderly), extrapolation from animals to humans, and the incompleteness of available data. Thus, the risk reference dose is not expected to cause health effects because it is selected to be much lower than dosages that do not cause adverse health effects in laboratory animals.

The measure used to describe the potential for noncancer health effects to occur in an individual is expressed as a ratio of estimated contaminant intake to the risk reference dose. A ratio equal to or less than one is generally not considered a significant public health concern. If exposure to the contaminant exceeds the risk reference dose, there may be concern for potential noncancer health effects because the margin of protection is less than that afforded by the reference dose. As a rule, the greater the ratio of the estimated contaminant intake to the risk reference dose, the greater the level of concern. This level of concern depends upon an evaluation of a number of factors such as the actual potential for exposure, background exposure, and the strength of the toxicologic data.

APPENDIX C

PUBLIC HEALTH HAZARD CATEGORIES

Interim Public Health Hazard Categories

CATEGORY / DEFINITION	DATA SUFFICIENCY	CRITERIA
A. Urgent Public Health Hazard This category is used for sites where short-term exposures (< 1 yr) to hazardous substances or conditions could result in adverse health effects that require rapid intervention.	This determination represents a professional judgement based on critical data which ATSDR has judged sufficient to support a decision. This does not necessarily imply that the available data are complete; in some cases additional data may be required to confirm or further support the decision made.	Evaluation of available relevant information* indicates that site-specific conditions or likely exposures have had, are having, or are likely to have in the future, an adverse impact on human health that requires immediate action or intervention. Such site-specific conditions or exposures may include the presence of serious physical or safety hazards.
B. Public Health Hazard This category is used for sites that pose a public health hazard due to the existence of long-term exposures (> 1 yr) to hazardous substance or conditions that could result in adverse health effects.	This determination represents a professional judgement based on critical data which ATSDR has judged sufficient to support a decision. This does not necessarily imply that the available data are complete; in some cases additional data may be required to confirm or further support the decision made.	Evaluation of available relevant information* suggests that, under site-specific conditions of exposure, long-term exposures to site-specific contaminants (including radionuclides) have had, are having, or are likely to have in the future, an adverse impact on human health that requires one or more public health interventions. Such site-specific exposures may include the presence of serious physical or safety hazards.
C. Indeterminate Public Health Hazard This category is used for sites in which "*critical*" data are *insufficient* with regard to extent of exposure and/or toxicologic properties at estimated exposure levels.	This determination represents a professional judgement that critical data are missing and ATSDR has judged the data are insufficient to support a decision. This does not necessarily imply all data are incomplete; but that some additional data are required to support a decision.	The health assessor must determine, using professional judgement, the "criticality" of such data and the likelihood that the data can be obtained and will be obtained in a timely manner. Where some data are available, even limited data, the health assessor is encouraged to the extent possible to select other hazard categories and to support their decision with clear narrative that explains the limits of the data and the rationale for the decision.
D. No Apparent Public Health Hazard This category is used for sites where human exposure to contaminated media may be occurring, may have occurred in the past, and/or may occur in the future, but the exposure is not expected to cause any adverse health effects.	This determination represents a professional judgement based on critical data which ATSDR considers sufficient to support a decision. This does not necessarily imply that the available data are complete; in some cases additional data may be required to confirm or further support the decision made.	Evaluation of available relevant information* indicates that, under site-specific conditions of exposure, exposures to site-specific contaminants in the past, present, or future are not likely to result in any adverse impact on human health.
E. No Public Health Hazard This category is used for sites that, because of the absence of exposure, do NOT pose a public health hazard.	Sufficient evidence indicates that no human exposures to contaminated media have occurred, none are now occurring, and none are likely to occur in the future	

*Such as environmental and demographic data; health outcome data; exposure data; community health concerns information; toxicologic, medical, and epidemiologic data; monitoring and management plans.

APPENDIX D

Summary of Public Comments and Responses

Summary of Public Comments and Responses

This summary was prepared to address comments and questions on the public comment draft of the Public Health Assessment for the *Hiteman Leather Site*, Village of West Winfield, Herkimer County. The public was invited to review the draft during the public comment period, which ran from July 14, 2000 - August 18, 2000. We received four responses from citizens in the Village of West Winfield. Some statements were reworded, combined or summarized for clarity and to avoid repetition. If you have any questions about this summary, you can contact the New York State Department of Health's (NYS DOH) Outreach Unit at the toll-free number 1-800-458-1158, extension 27530.

Comment #1 - Several residents expressed concern about the appearance of the property.

Response #1 - The removal of the remaining building rubble will be incorporated into the final site closure plan.

Comment #2 - A resident expressed concern about testing of the West Winfield Public Water Supply.

Response #2 - Although the public water supply wells are upgradient (in the opposite direction from groundwater flow) from the Hiteman Leather site, there is an ongoing mandated monitoring program. To date, no site-related contamination has been detected.

Comment # 3 - Historically, the Hiteman Leather property was used for purposes other than a tannery. Other site users included a machine shop, a tire recapping company and a cookie company.

Response # 3 - These additional site uses were verified by Mr. Stephen Davis, Town of Winfield Historian, and are included in the revised background section.

Comment # 4 - A resident reported past unauthorized trespassing and site use. The installation of a perimeter fence, which has been done, was noted by the resident as an appropriate deterrent.

Response # 4 - The fence will remain in place and maintained at least until after final site clean up and closure.

Comment # 5 - A resident questioned whether the median household income level listed in the *Demographics* section was accurate. The resident believes that the income level for the residential area around the site is lower than that listed.

Response # 5 - The *Demographics* section lists the median household income for the area within a one mile radius of the site. We expect some local variations in median income within that one mile radius.

Comment # 6 - One resident was concerned about weed growth along the Unadilla River.

Response # 6 - Although environmental conditions at the Hiteman Leather site are not believed to be a cause of weed growth along the river, soil eroding from the site into the river can increase weed growth. The US Environmental Protection Agency installed rip rap along the stream banks to prevent further erosion at the site.

APPENDIX E

ATSDR Glossary

ATSDR Plain Language Glossary of Environmental Health Terms

Absorption: How a chemical enters a person's blood after the chemical has been swallowed, has come into contact with the skin, or has been breathed in.

Acute Exposure: Contact with a chemical that happens once or only for a limited period of time. ATSDR defines acute exposures as those that might last up to 14 days.

Additive Effect: A response to a chemical mixture, or combination of substances, that might be expected if the known effects of individual chemicals, seen at specific doses, were added together.

Adverse Health Effect: A change in body function or the structures of cells that can lead to disease or health problems.

Antagonistic Effect: A response to a mixture of chemicals or combination of substances that is **less** than might be expected if the known effects of individual chemicals, seen at specific doses, were added together.

ATSDR: The **A**gency for **T**oxic **S**ubstances and **D**isease **R**egistry. ATSDR is a federal health agency in Atlanta, Georgia that deals with hazardous substance and waste site issues. ATSDR gives people information about harmful chemicals in their environment and tells people how to protect themselves from coming into contact with chemicals.

Background Level: An average or expected amount of a chemical in a specific environment. Or, amounts of chemicals that occur naturally in a specific environment.

Biota: Used in public health, things that humans would eat – including animals, fish and plants.

CAP: See **C**ommunity **A**ssistance **P**anel.

Cancer: A group of diseases which occur when cells in the body become abnormal and grow, or multiply, out of control

Carcinogen: Any substance shown to cause tumors or cancer in experimental studies.

CERCLA: See **C**omprehensive **E**nvironmental **R**esponse, **C**ompensation, and **L**iability **A**ct.

Chronic Exposure: A contact with a substance or chemical that happens over a long period of time. ATSDR considers exposures of more than one year to be *chronic*.

Completed Exposure Pathway: See **Exposure Pathway**.

Community Assistance Panel (CAP): A group of people from the community and health and environmental agencies who work together on issues and problems at hazardous waste sites.

Comparison Value: (CVs) Concentrations or the amount of substances in air, water, food, and soil that are unlikely, upon exposure, to cause adverse health effects. Comparison values are used by health assessors to select which substances and environmental media (air, water, food and soil) need additional evaluation while health concerns or effects are investigated.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

CERCLA was put into place in 1980. It is also known as **Superfund**. This act concerns releases of hazardous substances into the environment, and the cleanup of these substances and hazardous waste sites. ATSDR was created by this act and is responsible for looking into the health issues related to hazardous waste sites.

Concern: A belief or worry that chemicals in the environment might cause harm to people.

Concentration: How much or the amount of a substance present in a certain amount of soil, water, air, or food.

Contaminant: See **Environmental Contaminant**.

Delayed Health Effect: A disease or injury that happens as a result of exposures that may have occurred far in the past.

Dermal Contact: A chemical getting onto your skin. (see **Route of Exposure**).

Dose: The amount of a substance to which a person may be exposed, usually on a daily basis. Dose is often explained as "amount of substance(s) per body weight per day".

Dose / Response: The relationship between the amount of exposure (dose) and the change in body function or health that result.

Duration: The amount of time (days, months, years) that a person is exposed to a chemical.

Environmental Contaminant: A substance (chemical) that gets into a system (person, animal, or the environment) in amounts higher than that found in **Background Level**, or what would be expected.

Environmental Media: Usually refers to the air, water, and soil in which chemical of interest are found. Sometimes refers to the plants and animals that are eaten by humans. **Environmental Media** is the second part of an **Exposure Pathway**.

U.S. Environmental Protection Agency (EPA): The federal agency that develops and enforces environmental laws to protect the environment and the public's health.

Epidemiology: The study of the different factors that determine how often, in how many people, and in which people will disease occur.

Exposure: Coming into contact with a chemical substance.(For the three ways people can come in contact with substances, see **Route of Exposure**.)

Exposure Assessment: The process of finding the ways people come in contact with chemicals, how often and how long they come in contact with chemicals, and the amounts of chemicals with which they come in contact.

Exposure Pathway: A description of the way that a chemical moves from its source (where it began) to where and how people can come into contact with (or get exposed to) the chemical.

ATSDR defines an exposure pathway as having 5 parts:

1. Source of Contamination,
2. Environmental Media and Transport Mechanism,
3. Point of Exposure,
4. Route of Exposure; and,
5. Receptor Population.

When all 5 parts of an exposure pathway are present, it is called a **Completed Exposure Pathway**. Each of these 5 terms is defined in this Glossary.

Frequency: How often a person is exposed to a chemical over time; for example, every day, once a week, twice a month.

Hazardous Waste: Substances that have been released or thrown away into the environment and, under certain conditions, could be harmful to people who come into contact with them.

Health Effect: ATSDR deals only with **Adverse Health Effects** (see definition in this Glossary).

Indeterminate Public Health Hazard: The category is used in Public Health Assessment documents for sites where important information is lacking (missing or has not yet been gathered) about site-related chemical exposures.

Ingestion: Swallowing something, as in eating or drinking. It is a way a chemical can enter your body (See **Route of Exposure**).

Inhalation: Breathing. It is a way a chemical can enter your body (See **Route of Exposure**).

LOAEL: Lowest Observed Adverse Effect Level. The lowest dose of a chemical in a study, or group of studies, that has caused harmful health effects in people or animals.

Malignancy: See **Cancer**.

MRL: Minimal Risk Level. An estimate of daily human exposure – by a specified route and length of time -- to a dose of chemical that is likely to be without a measurable risk of adverse, noncancerous effects. An MRL should not be used as a predictor of adverse health effects.

NPL: The National Priorities List. (Which is part of **Superfund**.) A list kept by the U.S. Environmental Protection Agency (EPA) of the most serious, uncontrolled or abandoned hazardous waste sites in the country. An NPL site needs to be cleaned up or is being looked at to see if people can be exposed to chemicals from the site.

NOAEL: No Observed Adverse Effect Level. The highest dose of a chemical in a study, or group of studies, that did not cause harmful health effects in people or animals.

No Apparent Public Health Hazard: The category is used in ATSDR's Public Health Assessment documents for sites where exposure to site-related chemicals may have occurred in the past or is still occurring but the exposures are not at levels expected to cause adverse health effects.

No Public Health Hazard: The category is used in ATSDR's Public Health Assessment documents for sites where there is evidence of an absence of exposure to site-related chemicals.

PHA: Public Health Assessment. A report or document that looks at chemicals at a hazardous waste site and tells if people could be harmed from coming into contact with those chemicals. The PHA also tells if possible further public health actions are needed.

Plume: A line or column of air or water containing chemicals moving from the source to areas further away. A plume can be a column or clouds of smoke from a chimney or contaminated underground water sources or contaminated surface water (such as lakes, ponds and streams).

Point of Exposure: The place where someone can come into contact with a contaminated environmental medium (air, water, food or soil). For examples:
the area of a playground that has contaminated dirt, a contaminated spring used for drinking water, the location where fruits or vegetables are grown in contaminated soil, or the backyard area where someone might breathe contaminated air.

Population: A group of people living in a certain area; or the number of people in a certain area.

PRP: Potentially Responsible Party. A company, government or person that is responsible for causing the pollution at a hazardous waste site. PRP's are expected to help pay for the clean up of a site.

Public Health Assessment(s): See **PHA**.

Public Health

Hazard: The category is used in PHAs for sites that have certain physical features or evidence of chronic, site-related chemical exposure that could result in adverse health effects.

Public Health Hazard Criteria: PHA categories given to a site which tell whether people could be harmed by conditions present at the site. Each are defined in the Glossary. The categories are:

1. Urgent Public Health Hazard
2. Public Health Hazard
3. Indeterminate Public Health Hazard
4. No Apparent Public Health Hazard
5. No Public Health Hazard

Receptor Population: People who live or work in the path of one or more chemicals, and who could come into contact with them (See **Exposure Pathway**).

Reference Dose (RfD): An estimate, with safety factors (see **safety factor**) built in, of the daily, life-time exposure of human populations to a possible hazard that is not likely to cause harm to the person.

Route of Exposure: The way a chemical can get into a person's body. There are three exposure routes:
- breathing (also called inhalation),
- eating or drinking (also called ingestion), and
- or getting something on the skin (also called dermal contact).

Safety Factor: Also called **Uncertainty Factor**. When scientists don't have enough information to decide if an exposure will cause harm to people, they use "safety factors" and formulas in place of the information that is not known. These factors and formulas can help determine the amount of a chemical that is not likely to cause harm to people.

SARA: The Superfund Amendments and Reauthorization Act in 1986 amended CERCLA and expanded the health-related responsibilities of ATSDR. CERCLA and SARA direct ATSDR to look into the health effects from chemical exposures at hazardous waste sites.

Sample Size: The number of people that are needed for a health study.

Sample: A small number of people chosen from a larger population (See **Population**).

Source (of Contamination): The place where a chemical comes from, such as a landfill, pond, creek, incinerator, tank, or drum. Contaminant source is the first part of an **Exposure Pathway**.

Special Populations: People who may be more sensitive to chemical exposures because of certain factors such as age, a disease they already have, occupation, sex, or certain behaviors (like cigarette smoking). Children, pregnant women, and older people are often considered special populations.

Statistics: A branch of the math process of collecting, looking at, and summarizing data or information.

Superfund Site: See **NPL**.

Survey: A way to collect information or data from a group of people (**population**). Surveys can be done by phone, mail, or in person. ATSDR cannot do surveys of more than nine people without approval from the U.S. Department of Health and Human Services.

Synergistic effect: A health effect from an exposure to more than one chemical, where one of the chemicals worsens the effect of another chemical. The combined effect of the chemicals acting together are greater than the effects of the chemicals acting by themselves.

Toxic: Harmful. Any substance or chemical can be toxic at a certain dose (amount). The dose is what determines the potential harm of a chemical and whether it would cause someone to get sick.

Toxicology: The study of the harmful effects of chemicals on humans or animals.

Tumor: Abnormal growth of tissue or cells that have formed a lump or mass.

Uncertainty Factor: See **Safety Factor**.

Urgent Public Health Hazard: This category is used in ATSDR's Public Health Assessment documents for sites that have certain physical features or evidence of short-term (less than 1 year), site-related chemical exposure that could result in adverse health effects and require quick intervention to stop people from being exposed.