# Draft
# Public Health Response Plan to Prioritize and Evaluate the Public Health Impact of Environmental Contamination in the Village of Endicott, Broome County, New York

January 5, 2004

Prepared by:

The Agency for Toxic Substances and Disease Registry, the New York State Department of Health, and the Broome County Health Department

## I. The Public Health Response Plan (PHRP)

A Public Health Response Plan (PHRP) is a written plan designed to document historic, on-going, and planned public health actions being undertaken to address specific human exposure(s) to environmental contaminants. Health agencies, regulatory agencies and community stakeholders will use the PHRP to help prioritize and evaluate the public health impact of environmental contamination. The PHRP helps to facilitate increased communication and understanding between the involved agencies and community stakeholders.

This PHRP is being developed by the Agency for Toxic Substances and Disease Registry (ATSDR), the New York State Department of Health (NYSDOH) and the Broome County Health Department (BCHD) in response to community concerns about health issues associated with environmental contamination in the Village of Endicott. It is a "living" document. That is, it will be updated and shared with the public as progress warrants.

The PHRP will do the following:

- identify community concerns;
- provide an overview of environmental contamination and human exposures;
- provide descriptions of actions that are being proposed to address community concerns;
- assist stakeholders in prioritizing health agency and community activities;
- describe opportunities for input from the community;
- provide updates as new issues and concerns arise;
- provide an overview of completed health studies in the Endicott area (Appendix A); and
- give background on what proposed health studies can and cannot tell us, as well as describe how proposed studies will be conducted.

## II. Community Concerns

The community has expressed the following concerns regarding human health and the environment in the Village of Endicott:

- possible excesses of childhood and adult cancers;
- relationship of cancers to environmental factors;
- potential health effects from inhalation exposures as a result of vapor intrusion of VOCs into overlying structures and ambient air emissions;
- relationship of adverse birth outcomes to environmental factors;
- historic and current occupational exposures to chemicals and the potential health effects of those exposures; and
- potential health effects associated with exposure to low concentrations of VOCs in the public water supply

These concerns will be addressed based on their potential public health importance, community stakeholders' assessment of priority and the availability of resources.

## III. Overview—Environmental Contamination and Human Exposures

**Overall Setting**

The Village of Endicott is a mixed residential, commercial and industrial community in the Susquehanna River Valley. Soil in the area is mainly sand and gravel. Shallow groundwater is generally found at 18 to 24 feet below ground surface. In most areas of Endicott, the shallow and deep aquifer (the groundwater bearing zones of soil) are separated by a layer of dense silt, which acts as a confining layer. In a few locations, this confining layer is absent.

Endicott has a rich industrial heritage that included large manufacturing operations at the Endicott Johnson Tannery and International Business Machines (IBM) facility. Many historic and current businesses within the Village of Endicott used or use solvents that contain volatile organic compounds (VOCs). Such businesses include, but are not limited to, IBM, automotive repair facilities and dry-cleaners. As a result of leaks and spills associated with these operations, groundwater and soil gas in the Endicott area are contaminated with VOCs. This section provides a brief evaluation of human health exposure pathways to VOCs in Endicott.

**Soil**

Some areas of soil at the former IBM facility may be contaminated with VOCs. Since access to the former IBM facility is restricted and most of the site is paved, exposures from VOC contaminated soil is only a potential exposure pathway. Potential exposure to contaminated soil at other sites, such as those on Robinson Hill Road, will be evaluated as they are identified and investigated.

**Groundwater**

The shallow and deep aquifer in the area is contaminated with several VOCs. The contamination is mostly contained in the shallow aquifer. The area is served with public water from wells installed in the deep aquifer. In the past, routine monitoring of the main public supply well for this area, the Ranney Well, has detected VOCs at levels above NYS drinking water standards. Ingestion of water from the Ranney Well was a completed exposure pathway in the past. In 1991, an air stripper was installed on this well to remove VOCs and minimize exposures.

The South Street Well Field, which is intermittently used to supply the public water system, has had low level detections of VOCs. Detections of VOCs have not exceeded drinking water standards. Therefore, exposures above NYS drinking water standards from this well are not expected. The Village of Endicott is planning to install a treatment system on the South Street Well Field. In the future, exposure to low level VOC contamination in the drinking water from this well will be reduced.

Groundwater is generally found at 18 to 24 feet below ground surface in the Endicott area. Therefore, dermal contact with this contaminated groundwater is not expected.

**Ambient (Outdoor) Air**

There are many sources of contaminants to the ambient (outdoor) air including motor vehicle emissions, operation of sub-slab mitigation systems and industrial/commercial facilities. Inhalation exposure of contaminants in ambient air is a potential exposure pathway. Historic and current industrial/commercial operations, including the former IBM facility, emitted or emit contaminants to the outdoor air. The former IBM facility is still an active process facility known as Endicott InterConnect Technologies Incorporated. The facility currently has emissions of that are regulated by an air emissions permit issued by the NYSDEC. Current inhalation exposure of VOCs as a result of the operation of the sub-slab mitigation systems is being evaluated by NYSDEC in consultation with DOH. Measured ambient air data for contaminants that are representative of historic conditions may not be available for this area.

**Soil Gas and Indoor Air**

Soil gas is the air and/or vapor that occupies the spaces between soil particles in the ground. In some areas of Endicott, VOC contamination is present in the soil gas. East of Jefferson Avenue, the main VOC of concern is trichloroethene (TCE). TCE and its degradation by-products were found in indoor air as a result of soil gas contamination. Therefore, exposure to VOCs in the past was a completed exposure pathway. Owners of those structures impacted and most of those potentially impacted by contaminated soil gas have been offered mitigation systems. If a structure has a mitigation system, inhalation exposure to VOCs in indoor air as a result of contaminated soil gas is minimized. In those structures where an impact was identified and a mitigation system has not been installed, inhalation of VOCs in indoor air is still a completed exposure pathway.

West of Jefferson Avenue, the main contaminant of concern is tetrachloroethene (PCE or PERC). PERC and its degradation by-products were found in the soil gas and indoor air of some structures. Inhalation exposure to PERC is a completed exposure pathway in these structures. Future investigations planned by DEC will further evaluate this exposure pathway.

## IV. Status of On-Going Actions

**Environmental Investigation and Exposure Mitigation: IBM Endicott Site**

*Being Performed by:*

IBM Corporation, with NYSDEC, NYSDOH and BCHD oversight

*Project Overview:*

IBM is currently reevaluating the source area to determine if further source area removal is feasible. IBM is also completing a *Supplemental Groundwater Investigation* to re-evaluate the movements of contaminants off-site and to determine if there is a more effective way to capture, treat or contain the plume.

*Status:*

IBM is currently installing additional wells and conducting pumping tests as part of the *Supplemental Groundwater Investigation.*

*Timeline:*

The *Supplemental Groundwater Investigation Report* is expected to be completed in December 2003.

**Environmental Investigation and Exposure Mitigation: Area-Wide Investigation**

*Being Performed by:*

NYSDEC, in consultation with the NYSDOH and BCHD

*Project Overview:*

The focus of this investigation is to conduct a Preliminary Site Assessment (PSA) that will define further the extent of soil gas and groundwater contamination in the upper aquifer west of Jefferson Avenue. Another goal of this investigation is to identify other potential sources of VOC contamination of the soil gas and groundwater in Endicott. This portion of the investigation will include, but is not limited to, identifying the source of low level VOC contamination found in the South Street Well Field. If soil gas or groundwater is contaminated with VOCs, additional investigations of indoor air quality are likely.

*Status:*

The completed PSA work assignment has been forwarded to the DEC stand-by consultant.

*Timeline:*

The investigation is planned to begin during the 2003-2004 heating season.

**Environmental Investigation and Exposure Mitigation: Other Identified Site Investigations**

*Being Performed by:*

NYSDEC, in consultation with the NYSDOH and BCHD

*Project Overview:*

The focuses of these investigations are those potentially contaminated sites currently being handled under the Brownfield Cleanup Program, the Voluntary Cleanup Program, the Resource Conservation and Recovery Act or Environmental Protection Agency Emergency Removal Actions. These sites include, but are not limited to, Schapiro's Fine Dry-Cleaning, Endicott Forging, and the Robinson Hill Road sites.

*Status:*

Negotiations are currently proceeding between the NYSDEC and the involved parties for investigation of these sites.

*Timeline:*

Varies depending upon the specific site.

**Environmental Investigation and Exposure Mitigation: Ambient Air Investigations**

*Being Performed by:*

NYSDEC, in consultation with NYSDOH

*Project Overview:*

The goal of this project is to develop and implement an action plan to address community concerns that pertain to exposures to contaminants in the ambient air. The community has specifically identified emission sources such as industrial/commercial facilities and the operation of sub-slab mitigation systems.

*Status:*

NYSDEC has developed a draft work plan for the evaluation of potential VOC inhalation exposure as a result of the operation of sub-slab mitigation systems. This workplan is undergoing internal review. NYSDOH and NYSDEC are currently evaluating the feasibility of conducting an exposure assessment focusing on historic ambient air emissions from IBM and other sources. This evaluation includes identifying if sufficient data are available to conduct this type of assessment.

*Timeline:*

DEC anticipates that the workplan for investigation of the ambient air VOC contributions of sub-slab mitigation system operation will be finalized in winter 2003/04.

**Health Statistics Review: Cancer and Birth Outcome Analyses**

*Being Performed by:*

NYSDOH and ATSDR in cooperation with BCDH

*Project Overview:*

This project will compile information on the incidence of different types of childhood and adult cancers, as well as adverse birth outcomes, in an area of potential exposure to VOCs in soil vapors. This project may generate hypotheses that warrant additional follow-up. This review will determine if specified adverse health outcomes are higher, lower, or about what we expect to see in a community of this type. This study can not link adverse health outcomes with specific causes.

*Status:*

The NYSDOH is evaluating the incidence of cancer in children and adults in predefined geographic areas in the Village of Endicott and the Town of Union for the time period 1980 through the most recent data available. The NYSDOH is also evaluating the prevalence of birth defects in children from 1983 to the most recent data available, as well as other adverse birth outcomes from 1978 to the most recent data available. These include low birth weight, preterm birth, low birth weight for gestational age, and alterations in the male to female sex ratios. The NYSDOH will obtain the data for these activities from the New York State Cancer Registry, New York State Vital Records, and the New York State Congenital Malformations Registry databases.

The boundaries of the study area were selected based on the potential for soil vapor intrusion exposure. NYSDOH solicited input from the community on the study boundaries during a two-week comment period. The rates of these health outcomes in the study area (see attached map of the study area) will be compared to rates for New York State, excluding New York City. The results of these analyses may generate questions or hypothesis that may warrant further study.

*Timeline:*

The NYSDOH anticipates that the interpretation of findings will be presented as an ATSDR Health Consultation, with release of a draft for review and public comment by June 2005.

**Health Consultation: Public Health Implications of Exposures to Low-level VOCs in Public Drinking Water**

*Being Performed by:*

ATSDR and NYSDOH

*Project Overview:*

To evaluate the public health implications of exposure of Village and Town residents to the combination of several different VOCs detected at concentrations meeting applicable drinking water standards in the public water supply over the past 20 to 30 years.

*Status:*

ATSDR has begun to review historic monitoring data provided by the BCHD and the Village of Endicott from the South Street wells and the Ranney well for a time period of 20 to 30 years. ATSDR's Mixture's Workgroup will use this information to evaluate the combined public health implications of long- and short-term exposures to the mixture of low-level VOCs in the public water supplied to the residents of the Village of Endicott. Following this evaluation, the ATSDR and NYSDOH will develop a health consultation that provides the findings of the workgroup's evaluation.

*Timeline:*

The NYSDOH and ATSDR expect to release a draft of the health consultation for the public's review and comment by spring 2004.

**Health Statistics Review: "Leukemia Incidence among Workers in the Boot and Shoe Manufacturing Industry in the Town of Union, Broome County."**

*Being Performed by:*
NYSDOH

*Project Overview:*
This health study is a follow-up study of leukemia among males 65 and older diagnosed with cancer from 1981 to 1990 and residing in the Town of Union at the time of diagnosis. The focus of this study is to investigate whether men diagnosed with leukemia were more likely to have worked at the Endicott Johnson Boot and Shoe Manufacturer.

*Status:*
NYSDOH is currently preparing a draft report for public review and comment.

*Timeline:*
NYSDOH anticipates release of this document for public comment in early 2004.

- **The site-specific investigation documents and health studies can be reviewed, as they become available, at the George F. Johnson Memorial Library, Village of Endicott, 1001 Park Street, Endicott, NY 13760.**

## V. Proposed Actions

**Community Outreach and Education**

*To Be Performed by:*
NYSDOH, ATSDR and BCHD

*Purpose:*
To provide to the Village of Endicott (Town of Union) community an integrated outreach and education program that focuses on issues related to the work being performed by the ATSDR and the NYSDOH.

*Proposed Activities:*
- NYSDOH, ATSDR and BCHD will facilitate the creation of a stakeholder planning group. This planning group will consist of people from the community and from health and environmental agencies who work to resolve issues and problems related to environmental contamination in the community. Members will work to gather, review and prioritize community health concerns, provide information on how people might have been or might now be exposed to hazardous substances, and inform agencies on ways to involve the community in activities.

- NYSDOH, ATSDR and BCHD will discuss the concept behind the Public Health Response Plan at currently scheduled public meetings and reach out to the community to identify

individuals to be part of a stakeholder planning group;

- NYSDOH, ATSDR and BCHD will continue to participate in regular meetings with the stakeholder planning group and other community groups as appropriate. ATSDR and NYSDOH will request review and feedback from these groups on work in progress. ATSDR and NYSDOH will also attend and sponsor other public meetings and availability sessions related to the work being performed by the health and environmental agencies;

- NYSDOH, ATSDR and BCHD will develop informational materials and update existing materials that provide health messages such as in the previous NYSDOH fact sheet on soil vapor ventilation systems (released in April, 2003);

- To accomplish the above items, NYSDOH staff will be available in the Endicott area as need arises and resources allow;

- ATSDR will provide assistance to the to the NYSDOH in preparing, developing, and mailing materials to the public and medical community; and

- BCHD serves as the local contact for residents and a link to other agencies.

**Health Care Provider Outreach and Education**

*To Be Performed by:*

NYSDOH, ATSDR and BCHD

*Purpose:*

To provide the local medical community with information and solicit their input regarding the cancer and birth outcomes investigation and other work being performed by the health agencies.

*Proposed Activities:*

The NYSDOH, ATSDR and BCHD will reach out to the local medical community. The audience will consist of health care providers who are most likely to treat people with concerns about potential environmental exposures. Targeted specialties include Family Practice, Internal Medicine, Preventive Medicine, Oncology, Neurology, Allergy, Pediatrics, Obstetrics, Dermatology and Emergency Medicine. Educational materials will be also offered to nurses, to medical and nursing schools, residency programs, and medical libraries. A Certified Occupational and Environmental Health Nurse Specialist will conduct the Physician Outreach.

*Timeline:*

- The NYSDOH will meet with Broome County Health Officials to solicit input regarding available listings of health maintenance organizations and targeted health care providers by the end of 2003.

- The NYSDOH and BCHD will meet with selected local oncologists by the end of 2003 to demonstrate the available educational materials to be used ultimately for a large mailing to local area providers. The ATSDR Case Study in Environmental Medicine on trichloroethene is one example of such materials.

- The NYSDOH and BCHD will obtain a mailing list of selected medical specialists from the area surrounding and including Endicott by the end of 2003.

- The NYSDOH will give the mailing list to ATSDR with a list of selected educational materials to send out in early 2004. ATSDR will complete the mailing. As an incentive to read the materials, included will be a notice of the availability of free Continuing Education credits for providers to be accessed on-line.

- NYSDOH and BCHD will attend local and countywide meetings of health care professionals to continue distribution of educational materials during 2004.

- NYSDOH and BCHD will identify nursing groups, medical and nursing schools, residency programs and medical libraries to provide them with the appropriate ATSDR Case Studies in Environmental Medicine and other selected materials during 2004.

## VI. Next Steps

As needed, the NYSDOH and ATSDR will perform evaluations of emerging exposure issues as they arise.

NYSDOH, ATSDR and BCHD will work with the community in the creation of the stakeholder planning group.

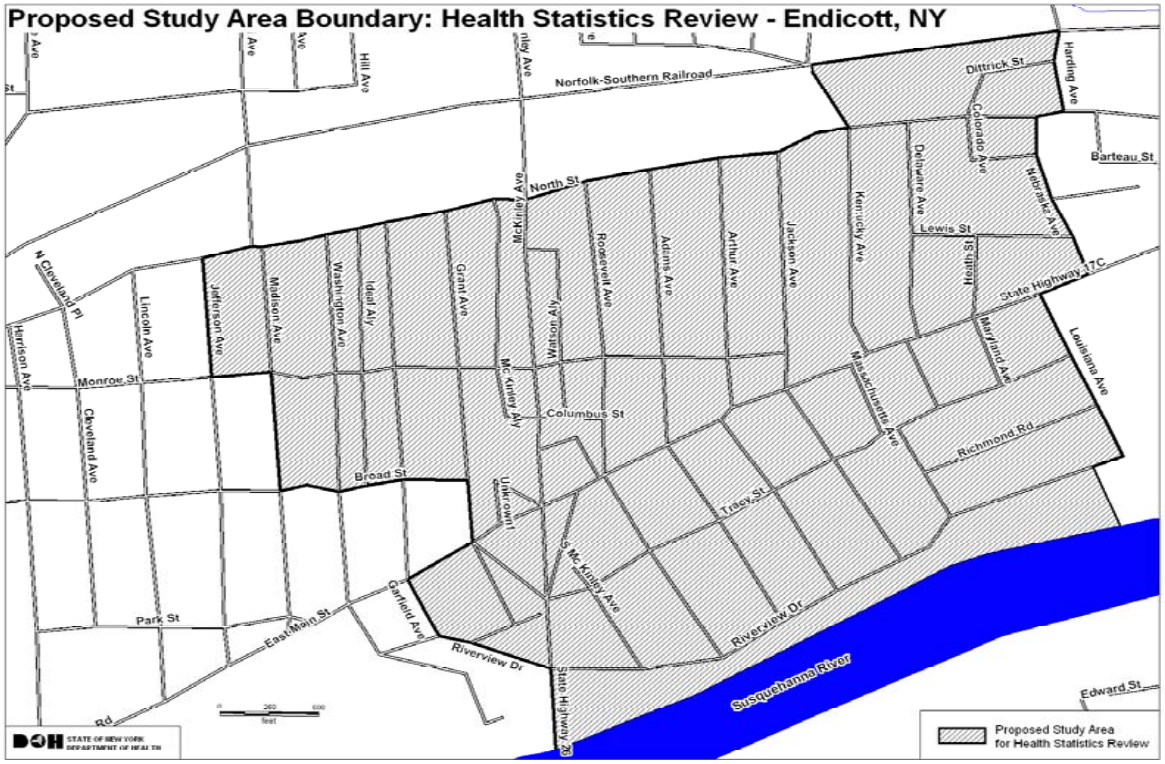
The National Institute for Occupational Safety and Health (NIOSH) will assess the feasibility of a study to evaluate the potential health effects associated with worker exposures at the former IBM facility.

The ATSDR, NYSDOH and BCHD are currently seeking the community's input on the following:

- proposed actions described in this document;
- prioritization of on-going and proposed activities; and
- additional concerns not identified in this document.

Comments on this initial PHRP can be made by returning the attached comment sheet to: Bridget Callaghan, 547 River Street Rm. 300, Troy, NY, 12180,
Comments can also be made by calling Ms. Callaghan at 1-800-458-1158 Ext. 27880, faxing (518) 402 –7859 or emailing to BEEI@health.state.ny.us. Where appropriate, the updated PHRP will incorporate comments received from the public.

- **Documents relating to the on-going projects in Endicott may be reviewed, as they become available, at the George F. Johnson Memorial Library, Village of Endicott, 1001 Park Street, Endicott, NY 13760.**


Proposed Study Area Boundary: Health Statistics Review - Endicott, NY
Norfolk-Southern Railroad
North St
Dittrick St
Harding Ave
Barteau St
Lewis St
State Highway 17C
Monroe St
Columbus St
Broad St
Tracy St
Richmond Rd
Riverview Dr
Park St
East Main St
Susquehanna River
Edward St
Jefferson Ave
Madison Ave
Washington Ave
Ideal Aly
Grant Ave
Mc Kinley Aly
Roosevelt Ave
Adams Ave
Arthur Ave
Jackson Ave
Kentucky Ave
Delaware Ave
Colorado Ave
Nebraska Ave
Ninth St
Maryland Ave
Louisiana Ave
Massachusetts Ave
Lincoln Ave
Cleveland Ave
Harrison Ave
N Cleveland Pl
Garfield Ave
Linkcrown
S Mc Kinley Ave
State Highway 26
Proposed Study Area for Health Statistics Review
STATE OF NEW YORK DEPARTMENT OF HEALTH

# Appendix A: Overview of Completed Health Studies

This section describes the health studies that have been completed in the Endicott area.

**1. "Cancer Occurrence by Common Drinking Water Source, Broome County, New York, 1976 – 1980"**

*Performed by:* NYSDOH and BCHD

*Time Period Examined:* 1976 – 1980

*Study Area:* Multiple areas served by specific water supplies within Broome County, New York. The area served by Endicott drinking water wells was a specific sub-area.

*Released*: 1986

*Purpose:*

To evaluate cancer incidence in areas served by water supplies within Broome County where volatile organic compounds were detected at concentrations greater than historic NYSDOH drinking water standards. The municipal wells of these public drinking water supplies were tested for VOCs in 1979 as part of a statewide effort. Water supplies containing elevated concentrations of VOCs were either treated or taken out of service.

*Overall Findings:*

No consistent patterns of elevated or decreased levels of cancer occurrence were found. Some types of cancer were statistically significantly elevated for only males or only females in some of the study areas.

*Endicott-specific Findings:*

Statistically significant excesses of all cancers combined for males, leukemia among males, and lung cancer among females were found in the Endicott study area.

*Follow-up Study:*

"Cancer Occurrence by Common Drinking Water Source, Broome County, New York, 1981 – 1990"

**2. "Cancer Occurrence by Common Drinking Water Source, Broome County, New York, 1981-1990"**

*Performed by:* NYSDOH, with funds from and oversight by ATDSR

*Time Period Examined:* 1981 – 1990

*Study Area:*

Multiple areas served by specific water supplies within Broome County, New York. The area served by Endicott drinking water wells was a specific sub-area.

*Released*: 1999

*Purpose:*

To evaluate cancer incidence in areas served by water supplies within Broome County for the period 1981-1990, where volatile organic compounds were detected at concentrations greater than historic NYSDOH drinking water standards. The municipal wells of these public drinking water supplies were tested for VOCs in 1979 as part of a statewide effort. Water supplies containing elevated concentrations of VOCs were either treated or taken out of service.

*Overall Findings:*

No consistent patterns of elevated or decreased levels of cancer occurrence were found. Some types of cancer were statistically significantly elevated for only males or only females in some of the study areas.

*Endicott-specific Findings:*

No significant excess or deficit of any type of cancer among males or females was found in the Endicott study area. The observed number of cases of leukemia in Endicott was somewhat higher than expected for males and females during 1981-1990, but not significantly so. The number of cases of leukemia occurring among children was examined separately in the Endicott study area and no excess was observed.

*Follow-up Study:*

Due to the suggestion of an elevation of leukemia in the Endicott study area, a follow-up study of leukemia among males 65 and older diagnosed with cancer from 1981 to 1990 and residing in the Town of Union at the time of diagnosis is being conducted by the NYSDOH.

**3. "Childhood Leukemia in the Town of Union, Broome County, New York 1993-1994"**

*Performed by:* NYSDOH

*Time Period Examined:* 1993 – 1994

*Study Area:* Town of Union, Broome County, New York

*Released:* 1995

*Purpose:*

To investigate reports of an unusual number of leukemia diagnoses among children residing in the study area.

*Overall Findings:*

The investigation confirmed that a total of seven cases of children under the age of 15 were diagnosed with leukemia in 1993 and 1994 in the Town of Union. This was a significantly greater number than the approximately one case expected in a town of this size in two years. Interviews with parents were conducted and possible contributing factors, both environmental and individual, were examined in depth.

No information was found that suggested a common exposure to an environmental or physical agent as a cause for the childhood leukemia elevation. All of the children who developed

leukemia were born after the early 1980s, after the treatment or closure of municipal wells that exceeded drinking water standards. None of the children attended the same school, pre-school, or day care. The children's residences were not clustered in any one area of the Town of Union. None of the environmental factors reviewed increased in the late 1980s or early 1990s such that a sudden increase in childhood leukemia in 1993-1994 would occur.

*Follow-up Study:*
Ongoing Cancer Surveillance program

- **Copies of the studies listed above can be obtained by calling Nicholas Teresi at 1-800-458-1158 extension 27530. These documents are also available for public review at the George F. Johnson Memorial Library, Village of Endicott, 1001 Park Street, Endicott, NY 13760.**

# Appendix B: Glossary

## General Terms

**Adverse health effect**
A change in body function or cell structure that might lead to disease or health problems

**Ambient**
Surrounding (for example, ambient air).

**Aquifer**
An underground source of water. This water may be contained in a layer of rock, sand or gravel.

**Background level**
An average or expected amount of a substance or radioactive material in a specific environment, or typical amounts of substances that occur naturally in an environment.

**Cancer**
Any one of a group of diseases that occur when cells in the body become abnormal and grow or multiply out of control.

**Case control study**
A study in which people with a disease (cases) are compared to people without the disease (controls) to see if past exposure to chemicals or other risk factors were different.

**Cluster investigation**
A review of an unusual number, real or perceived, of health events (for example, reports of cancer) grouped together in time and location. Cluster investigations are designed to confirm case reports; determine whether they represent an unusual disease occurrence; and, if possible, explore possible causes and contributing environmental factors.

**Completed exposure pathway** [see exposure pathway].

**Contaminant**
A substance that is either present in an environment where it does not belong or is present at levels that are unusual.

**Dermal**
Referring to the skin. For example, dermal absorption means passing through the skin.

**Dermal contact**
Contact with (touching) the skin [see route of exposure].

**Descriptive Epidemiologic study**
A study of the distribution of disease frequency in human populations, often based on routinely available data and case reports.

**Environmental media**
Soil, water, air, biota (plants and animals), or any other parts of the environment.

**Environmental media and transport mechanism**
Environmental media include water, air, soil, and biota (plants and animals). Transport mechanisms move contaminants from the source to points where exposure can occur. The environmental media and transport mechanism is the second part of an exposure pathway.

**EPA**
United States Environmental Protection Agency.

**Epidemiology**
The study of the occurrence and causes of health effects in human populations. An epidemiological study often compares two groups of people who are alike except for one factor such as exposure to a chemical or the presence of a health effect. The investigators try to determine if the factor is associated with the health effect.

**Exposure**
Contact with a substance by swallowing, breathing, or touching the skin or eyes. Exposure may be short-term (acute), of intermediate duration, or long-term (chronic).

**Exposure assessment**
A process that estimates the amount of a chemical that enters or comes into contact with people or animals. An exposure assessment also describes how often and for how long an exposure occurred, and the nature and size of a population exposed to a chemical.

**Exposure investigation**
The collection and analysis of site-specific information and biologic tests (when appropriate) to determine whether people have been exposed to substances.

**Exposure pathway**
The route a substance takes from its source (where it began) to its end point (where it ends), and how people or other organisms can come into contact with (or get exposed to) it. An exposure pathway has five parts: a source of contamination (such as an abandoned business); an environmental media and transport mechanism (such as movement through groundwater); a point of exposure (such as a private well); a route of exposure (eating, drinking, breathing, or touching), and a receptor population (people or other organisms potentially or actually exposed). When all five parts are present, the exposure pathway is termed a completed exposure pathway.

**Groundwater**
Water beneath the earth's surface in the spaces between soil particles and between rock surfaces. See “aquifer”.

**Health consultation**
A review of available information or collection of new data to respond to a specific health question or request for information about a potential environmental hazard. Health consultations

are focused on a specific exposure issue. Health consultations are therefore more limited than a public health assessment, which reviews the exposure potential of each pathway and chemical [compare with public health assessment].

**Health education**
Programs designed with a community to help it know about health risks and how to reduce those risks.

**Health investigation**
The collection and evaluation of information about the health of community residents. This information is used to describe or count the occurrence of a disease, symptom, or clinical measure and to evaluate the possible association between the occurrence and exposure to hazardous substances.

**Health statistics review**
The analysis of existing health information (i.e., from death certificates, birth defects registries, and cancer registries) to determine if there is excess disease in a specific population, geographic area, and time period. A health statistics review is a descriptive epidemiologic study.

**Incidence**
The number of new cases of disease in a defined population over a specific time period [contrast with prevalence].

**Ingestion**
Swallowing (such as eating or drinking). Chemicals in or on food, soil, drink, utensils, cigarettes, hands, etc. can be ingested. After ingestion, chemicals may be absorbed into the blood and distributed throughout the body.

**Inhalation**
Breathing. People or organisms can take in chemicals by breathing contaminated air.

**Migration**
Moving from one location to another.

**Mitigation**
An action intended to break a completed or potentially complete human or other organism exposure pathway.

**Organic**
Generally considered as originating from plants or animals, and made primarily of carbon and hydrogen. Scientists use the term organic to mean those chemical compounds which are based on carbon.

**Plume**
An area of chemicals moving away from its source in a long band or column. A plume, for example, can be a column of smoke from a chimney or chemicals moving with groundwater.

**Point of exposure**
The place where someone or other organism can come into contact with a substance present in the environment [see exposure pathway].

**Potential Exposure Pathway** [see exposure pathway]

**Population**
A group or number of people living within a specified area or sharing similar characteristics (such as occupation or age).

**Prevalence**
The number of existing disease cases in a defined population during a specific time period [contrast with incidence].

**Public availability session**
An informal, drop-by meeting at which community members can meet one-on-one with Agency staff members to discuss health and site-related concerns.

**Public comment period**
An opportunity for the public to comment on agency findings or proposed activities contained in draft reports or documents. The public comment period is a limited time period during which comments will be accepted.

**Public health action**
A list of steps to protect public health.

**Public health assessment (PHA)**
An ATSDR document that examines hazardous substances, health outcomes, and community concerns at a hazardous waste site to determine whether people could be harmed from coming into contact with those substances. The PHA also lists actions that need to be taken to protect public health [compare with health consultation].

**Public Health Response Plan**
A Public Health Response Plan (PHRP) is a written plan designed to document historic, on-going, and planned public health actions being undertaken to address specific human exposure(s) to environmental contaminants.

**Public health surveillance**
The ongoing, systematic collection, analysis, and interpretation of health data. This activity also involves timely dissemination of the data and use for public health programs.

**Public meeting**
A public forum with community members for communication about a site.

**Receptor population**
People or other organism who could come into contact with hazardous substances [see exposure pathway].

**Registry**
A systematic collection of information on persons exposed to a specific substance or having specific diseases [see exposure registry and disease registry].

**Route of exposure**
The way in which a person or other organism may contact a substance. For example, drinking (ingestion) and bathing (skin contact) are two different routes of exposure to contaminants that may be found in water. See "Exposure".

**Solvent**
A liquid capable of dissolving or dispersing another substance (for example, acetone or mineral spirits).

**Source of contamination**
The place where a hazardous substance comes from, such as a landfill, waste pond, incinerator, storage tank, or drum. A source of contamination is the first part of an exposure pathway.

**Stakeholder**
A person, group, or community who has an interest in activities at a hazardous waste site.

**Statistics**
A branch of mathematics that deals with collecting, reviewing, summarizing, and interpreting data or information. Statistics are used to help evaluate whether differences between study groups are meaningful.

**Substance**
A chemical.

**Superfund (federal and state)**
The federal and state programs to investigate and clean up inactive hazardous waste sites.

**Volatile**
Evaporating readily at normal temperatures and pressures. The air concentration of a highly volatile chemical can increase quickly in a closed room.

**Volatile organic compounds (VOCs)**
An organic chemical that evaporates readily. Petroleum products such as kerosene, gasoline and mineral spirits contain VOCs. Chlorinated solvents such as those used by dry cleaners or contained in paint strippers are also VOCs. See "organic" and "volatile".

# COMMENT SHEET

## Draft Public Health Response Plan (PHRP) to Prioritize and Evaluate the Public Health Impact of Environmental Contamination in the Village of Endicott, Broome County, New York

Please review the list of community concerns on Page 1 of the PHRP. Are your concerns identified in this list? ____Yes ____No
If no, please describe your concern(s).

Do you know of specific individuals (including yourself), groups or organizations who might be interested in participating in a stakeholder planning group? Please list below (see page 7, "Community Outreach and Education", Proposed Activities, 1st Bullet).

Do you know of any specific individuals or groups in the local medical community who would like to

a) receive information about the cancer and birth outcomes investigation and other work being performed by the health agencies? Please list below.

b) provide input to the health agencies? Please list below.

(OVER)

What kind of meeting format do you prefer? Check all that apply, but say more if you especially like or dislike a particular format:

____Public availability session (see glossary of terms)
____Presentation followed by question and answer session
____Small group discussion
____Other (please describe) _____
Comments:

Although convenient, individual mailings are very costly. What other ways do you suggest we distribute information? (check as many as you wish):

____e-mail (my e-mail address is _____)
____on a website
____at my local library
____at the Town Hall
____local newspaper
____other _____

Please return this form in one of four ways:

**Mail**: Bettsy Prohonic
New York State Department of Health
Center for Environmental Health
Outreach and Education Unit
547 River Street, Rm. 316
Troy, NY 12180-2216

**E-mail**: ejp04@health.state.ny.us

**Fax**: (518) 402-7530

Or **call** in your responses to Ms. Prohonic at the toll-free Environmental Health Infoline: 518-402-7530