

**Assessment of Environmental Concerns:
Rodney Metals and Brittany Dyeing and Printing Corporation
and Evaluation of Cancer Incidence in New Bedford's South End
1982-1998**

Questions and Answers

1. Q. Why was a study of cancer incidence rates conducted in the South End of New Bedford?

A. In response to requests by concerned residents, Representative Antonio Cabral, and the local Health Department, the Community Assessment Program (CAP) of the Massachusetts Department of Public Health (MDPH), Bureau of Environmental Health Assessment (BEHA) conducted an investigation of cancer and environmental factors in New Bedford. The primary environmental concerns were associated with Rodney Metals and Brittany Dye.

2. Q. How was the study conducted?

A. This Health Consultation was prepared by MDPH under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR) and followed a standard peer-reviewed protocol for conducting descriptive epidemiologic investigations, approved for use in Massachusetts in 1992. In addition to reviewing descriptive information from the Massachusetts Cancer Registry (MCR) and available environmental data, we considered the most current relevant scientific, medical, and epidemiologic literature regarding chemical toxicity and risk factors for the development of cancer.

3. Q. What cancer data were used in this study?

A. Cancer incidence data for the years 1982–1998 were obtained for the South End area of New Bedford (i.e., census tract 6528) from the Massachusetts Cancer Registry (MCR), a division of the Bureau of Health Statistics, Research, and Evaluation within MDPH. Cancer incidence data consists of reports of newly diagnosed cases of cancer, not reports of cancer deaths. The MCR has been monitoring cancer incidence in Massachusetts by law since 1982. The 17-year period 1982–1998 is the period for which the most recent and complete cancer incidence data were available at the time of this analysis.

4. Q. What types of cancer were studied and why?

A. Eight cancer types were evaluated in this investigation, including cancers of the bladder, breast, kidney, liver, lung, and pancreas as well as leukemia and non-Hodgkin's lymphoma (NHL). These cancer types were selected for evaluation based on elevations that were observed at the city level in a preliminary review of cancer rates in New Bedford and/or to address concerns raised by residents over suspected elevations in some of these cancer types in the South End area.

5. Q. Did the study review cancer patterns at the neighborhood level?

A. Yes. The census tract (CT) is the smallest geographic area for which cancer rates can be accurately calculated because it is the smallest area for which accurate population counts by age group and gender are available. However, a qualitative evaluation of the patterns of cancer at a smaller geographic level (i.e., the neighborhood level) was also conducted by plotting the address reported for each person diagnosed with cancer on a map to assess any possible concentrations of cases in any one area of New Bedford census tract 6528. (For confidentiality reasons, it is not possible to include maps showing the locations of individuals diagnosed with cancer in the report.)

6. Q. What environmental data were evaluated?

A. To evaluate concerns about potential environmental exposures from Rodney Metals and Brittany Dye, MDPH contacted the Massachusetts Department of Environmental Protection (MDEP) to obtain and review available environmental data for these companies. In addition, we reviewed Toxics Chemical Release Inventory (TRI) data available from the U.S. Environmental Protection Agency (USEPA). An evaluation of potential pathways of exposure was conducted to determine whether releases or activities at the Rodney Metals and Brittany Dye sites could have impacted residents in the South End area. Finally, information regarding other potential environmental sources located in the South End area of New Bedford and listed with MDEP as a location of a hazardous material or oil release (i.e., “21E sites”) was reviewed.

7. Q. Did the study find statistically significantly elevated rates of any type of cancer?

A. The majority of the eight cancer types evaluated in New Bedford census tract (CT) 6528 during 1982–1998 occurred approximately at or near expected rates, however, statistically significant elevations were observed in the incidence of leukemia among females during the overall time period 1982–1998 and in the incidence of kidney cancer among males during the most recent time period evaluated, 1995–1998. The rate of lung cancer in this area was statistically significantly lower than expected during 1982–1998.

8. Q. What did the study find about the geographic pattern of cancer in New Bedford’s South End?

A. In general, review of the geographic distribution of cancer revealed no apparent spatial concentrations of individuals diagnosed with cancer at the neighborhood level or in relation to the Rodney Metals and Brittany Dye properties or other environmental release sites in this area. However, a concentration of five individuals diagnosed with kidney cancer was observed in close proximity to the Rodney Metals and Brittany Dye facilities. Available data on smoking and occupation were limited, and the possible role of these and other personal risk factors, such as genetics and diet, could not be evaluated for these individuals.

9. Q. Has kidney cancer been associated with exposure to contaminants of concern at Rodney Metals and Brittany Dye?

A. Contaminants of concern at Rodney Metals and Brittany Dye (e.g., chlorinated volatile organic compounds) have been suggested in some studies to be associated with kidney cancer, liver cancer, and, to a lesser extent, non-Hodgkin's lymphoma (NHL). It is important to note, however, that neither NHL nor liver cancer displayed similar geographic patterns of incidence in this area of New Bedford.

10. Q. If most cancers do not show a pattern related to Rodney Metals or Brittany Dye, does that mean that there are no environmental concerns associated with the facilities?

A. Not necessarily. Environmental contaminants have been detected in subsurface soils and groundwater at Rodney Metals. In addition, both Rodney Metals and Brittany Dye have reported historical air releases of chlorinated volatile organic compounds. It does not appear that area residents are being exposed to subsurface contamination, however, it is not possible to evaluate whether air emissions resulted in the presence of elevated levels of chlorinated volatile organic compounds in the ambient air adjacent to these facilities and, if present, whether human exposure is occurring.

11. Q. Are there non-cancer health concerns associated with these facilities?

A. Residents of the South End area of New Bedford near Rodney Metals and Brittany Dye also expressed concerns about acute non-cancer health outcomes, such as upper respiratory irritation, nausea, and headaches. It is possible that some residents living in close proximity to the two facilities, particularly individuals with pre-existing conditions such as asthma and allergies, could experience some irritant effects associated with chlorinated volatile organic compounds in ambient air. Due to the existence of unpleasant odors and nuisance conditions reported by some individuals residing in areas surrounding the two facilities, MDPH recommends that the Massachusetts Department of Environmental Protection (MDEP) work with both Rodney Metals and Brittany Dye to determine any additional actions that could reduce potential impacts to residents in the surrounding neighborhoods.

12. Q. Does MDPH plan to conduct further study in the South End area of New Bedford?

A. Yes. Based on the observed geographic concentration of kidney cancer diagnoses in proximity to the Rodney Metals and Brittany Dye facilities during the most recent time period evaluated, 1995–1998, MDPH will provide additional follow-up for all individuals diagnosed with this cancer type in New Bedford census tract (CT) 6528 during 1982–1998. Specifically, the 12 individuals (or their families) who provide informed consent will have the opportunity for personal interviews and/or medical records review by an environmental/occupational physician to determine any possible environmental or other factors that may have contributed to their kidney cancer diagnosis.

13. Q. Where can I obtain a copy of the Health Consultation *Assessment of Environmental Concerns: Rodney Metals and Brittany Dyeing and Printing Corporation and Evaluation of Cancer Incidence in New Bedford's South End, 1982-1998*?

- A. The full report is available on the MDPH, BEHA web site at www.state.ma.us/dph/beha. In addition, a copy of the report is available at the New Bedford Free Public Library (Main Library).

14. Q. Who should I contact for more information?

- A. For more information on the Health Consultation *Assessment of Environmental Concerns: Rodney Metals and Brittany Dyeing and Printing Corporation and Evaluation of Cancer Incidence in New Bedford's South End, 1982-1998*, please contact:

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