Memo

Center for Epidemiology
RI Department of Health

Date: 24 March 2006

To: Dr. Robert Vanderslice
Chief, Environmental Health Risk Assessment
Rhode Island Department of Health

From: John P. Fulton, PhD
Center for Epidemiology
Rhode Island Department of Health

Re: Analysis of Cancer Rates, Census tract 15, City of Providence, Rhode Island (Mashapaug Pond)

Bob:

At your request, Leanne Chiaverini and I have looked at cancer incidence rates for Census Tract 15 ("CT15"), City of Providence, Rhode Island (Mashapaug Pond), focusing on cancers of those anatomical sites (and leukemia, non-Hodgkin lymphoma, and myeloma) that in past studies have been useful in exploring environmental cancer risks: bladder, brain and CNS, kidney and renal pelvis, leukemia, liver and intrahepatic bile duct, lung and bronchus, non-Hodgkin lymphoma, pancreas, myeloma, and thyroid.

Because the population in CT15 is relatively small (an annual average of about 1300 males and 1400 females over the period of observation), rates were computed for the entire observation period for which cancer case reports are available, calendar years 1987-2002. Average annual age-standardized cancer incidence rates were computed by sex and anatomical site (specified above), using the U.S. population of 2000 as the standard population, for both CT15 and Rhode Island as a whole.

In comparison to the State as a whole, CT15 did not experience an excess in newly diagnosed cancer cases during the period of observation. In fact, CT15 had a deficit of about 20 cases over 16 years, on the basis of statewide experience. CT15 had elevated incidences of three types of cancer: liver and

intrahepatic bile duct (2 excess cases in 16 years), non-Hodgkin lymphoma (4 excess cases in 16 years), and myeloma (3 excess cases in 16 years). However, we would expect differences of approximately this size on the basis of chance alone ($P<0.05$).

In addition to the above, we computed ratios of environmental cancers to all cancers, and of environmental (non-tobacco) cancers to all cancers. In the first instance, the ratio for CT15 was 36, versus 32 for Rhode Island; in the second instance, the ratio for CT15 was 16, versus 24 for Rhode Island.

In sum, nothing stands out in the analysis that would indicate, on the basis of the cancer data alone, higher-than average risk of environmental cancers.

Please let me know what additional analyses we may pursue for you on this case.

John