

Letter Health Consultation

Evaluation of Private Drinking Water Well in the Upper Hudson River

HUDSON RIVER PCBs

Westchester, Rockland, Putnam, Orange, Dutchess, Ulster, Columbia
Greene, Rensselaer, Albany, Washington and Saratoga Counties,
New York

EPA FACILITY ID: NYD980763841

Prepared by
The New York State Department of Health

DECEMBER 2, 2013

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Community Health Investigations
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

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Center for Environmental Health
Albany, New York

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NEW YORK
state department of
HEALTH

Nirav R. Shah, M.D., M.P.H.
Commissioner

Sue Kelly
Executive Deputy Commissioner

November 25, 2013

Mr. David King
U.S. Environmental Protection Agency, Region II
Hudson River Field Office
421 Lower Main Street
Hudson Falls, NY 12839

Re: Upper Hudson River PCB Superfund Site
Private Well Survey
Site # NYD980763841
Health Consultation

Dear Mr. King:

In February of 2009, the New York State Department of Health (DOH), in consultation with the New York State Department of Environmental Conservation (DEC), and the United States Environmental Protection Agency (EPA), initiated a private well survey along the Upper Hudson River (UHR). The survey was initiated in response to public inquiry received during the UHR Floodplains Investigation, at stakeholder meetings, and phone calls received at our offices. The primary objective of the survey was to generate data that could be used to respond to public concern regarding private drinking water wells, specifically to evaluate the potential for exposures to polychlorinated biphenyl (PCB) contamination via drinking water from private wells along the river. Additionally, data generated by the survey would help to support an evaluation of private well types and uses, groundwater quality adjacent to the river with respect to PCBs, and whether some wells, or some types of wells, may be influenced by the river. This letter is a summary of DOH's public health evaluation of the potential current and future exposures to contamination from the site via private drinking water wells adjacent to the river.

Site Background:

Sediments within the UHR are contaminated with PCBs as a result of industrial discharges that occurred between the 1940s and 1970s. PCBs were discharged to the river from the General Electric (GE) plants in Hudson Falls and Fort Edward and subsequently migrated downstream. Once PCBs entered the river, they were deposited and mixed with the sediments at many locations on the river bottom and at some locations along the shoreline. In 2002, the EPA signed a Record of Decision (ROD) for the cleanup of the Hudson River PCBs Superfund Site. The PCB-contaminated sediments on the river bottom are being remediated as part of the Hudson River dredging project which began in 2009 and is currently underway. The ROD also requires an evaluation of the possibility for residents and ecological receptors to be exposed to PCBs in floodplain soil.

The river is a dynamic system that has the ability to pick-up, carry, and move river bottom sediments, some of which may contain PCBs, further downstream. During periods of flooding, fine-grained sediments, and any PCBs that they contain, may be deposited above the riverbank upon the floodplain and become part of the soil. Certain areas of the floodplain are more likely to accumulate PCB contaminated soil. These include low-lying areas right next to the river that are subject to frequent flooding, backwater areas, and areas on the inside of large bends in the river. In many instances, soils within floodplain areas may appear wet and muddy throughout the year. It is these areas where flooding occurs and floodplain deposits accumulate that people may be exposed to soils contaminated with PCBs.

Since 2006, the EPA and GE have been actively evaluating floodplain soils in an effort to understand the nature and extent of PCB contamination. A significant level of public outreach accompanied this process and it was during that time when it became evident that many residents living along the UHR questioned whether their drinking water wells could also be impacted with PCBs associated with the river and floodplain. While the conceptual site model and the regional hydrology do not support the notion that PCB-contaminated river water would be migrating away from the river, and it is unlikely that pumping associated with a residential water supply would be significant enough to pull water away from the river, there was little data to support these hypotheses. Additionally, previous work commissioned by GE acknowledged that most water would likely flow towards the river; however, there may be locations where water may migrate away from the river (e.g. behind a dam or during high flow conditions).

Private Well Survey:

The initial focus of the survey was north of the Village of Stillwater due to the fact that public water is less prevalent and PCB concentrations tend to be higher in both the river and the floodplain. The DOH reviewed information pertaining to private wells along the river (e.g. well type, depth, water quality, treatment, etc.), noted any previous sampling results, and prioritized wells for sampling. Detailed information was reviewed for over 90 properties and those which appeared to be most susceptible to PCB contamination from the river were sampled first. Wells that were initially targeted for sampling were typically shallow and close to the river, on islands, or behind dams such as the one in Fort Miller. While an initial emphasis was placed on these wells, an effort was made to sample each type of well that was located in a given stretch of the river. These typically included shallow well points, dug wells, and drilled wells of varying depths. A sampling survey form was created and completed for each well that was sampled. Figure 1 depicts the segment of the river where wells were sampled.

Environmental Sampling:

Beginning in April 2009, samples were collected by DOH personnel and analyzed by the DOH Wadsworth Center. Twenty-eight private wells were sampled during 2009 and an additional five private wells were sampled in the fall of 2011. Samples were analyzed for PCB Aroclors using EPA Method 508, with a reporting limit of

0.05 micrograms per liter (mcg/L), and for total coliform and *E. coli* using method SM-18. PCB sampling results were compared to the NYS drinking water standard of 0.5 mcg/L for total PCBs in water, and results for Aroclor 1254 could also be compared to ATSDR's environmental media evaluation guide of 0.7 mcg/L for this Aroclor mixture (ATSDR 2013). PCBs were not detected (i.e. were not found at concentrations greater than or equal to 0.05 mcg/L) in any of the private well samples. Based on the limited private well sampling that has been conducted as part of this survey, in conjunction with the conceptual site model and our understanding of the regional hydrogeology, private drinking water wells along the UHR are not expected to represent an exposure concern for PCBs associated with the UHR PCB Superfund site. Fifteen (45%) of the wells sampled tested positive for coliform and two of those were also positive for *E. coli*. Guidance was provided to the property owners for properly repairing, disinfecting and retesting their wells.

The Agency for Toxic Substances and Disease Registry (ATSDR) lists a Cancer Risk Evaluation Guide (CREG) of 0.018 mcg/L for PCBs (ATSDR, 2013) which is the PCB water concentration associated with an increased lifetime cancer risk of one in one million. The CREG is about three times lower than the reporting limit for EPA method 508. Due to analytical limitations, we do not know if PCBs were present between the level of the CREG (0.018 mcg/L) and the reporting limit (0.05 mcg/L); however, such levels, if present, would pose a low estimated increased risk of cancer.

Conclusion:

The DOH and ATSDR conclude that PCBs from the Hudson River site are not expected to harm people's health via private drinking water wells. This is because most private wells are not connected to the river and PCBs were not detected in the most vulnerable (e.g. shallow and close to the river) private drinking water wells that were sampled.

Any private wells that are identified in the future as being connected to the river may be susceptible to PCB contamination.

Recommendation:

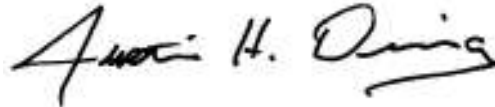
Any private drinking water supplies that are identified in the future as potentially being connected to the river should be evaluated and considered for sampling because PCBs associated with the site would likely be able to enter these supplies. DOH recommends that any supplies that are shown to be connected to the river not be used without proper treatment.

Public Health Action Plan:

The DOH will assist, if requested, with additional private well sampling along the UHR and continue to work with EPA and GE to inform the public about private drinking water supplies along the Upper Hudson River.

If you have any questions, please call me at (518) 402-7860.

Sincerely,

A handwritten signature in black ink that reads "Justin H. Deming". The signature is written in a cursive style with a horizontal line under the name.

Justin H. Deming
Public Health Specialist III
Bureau of Environmental Exposure Investigation

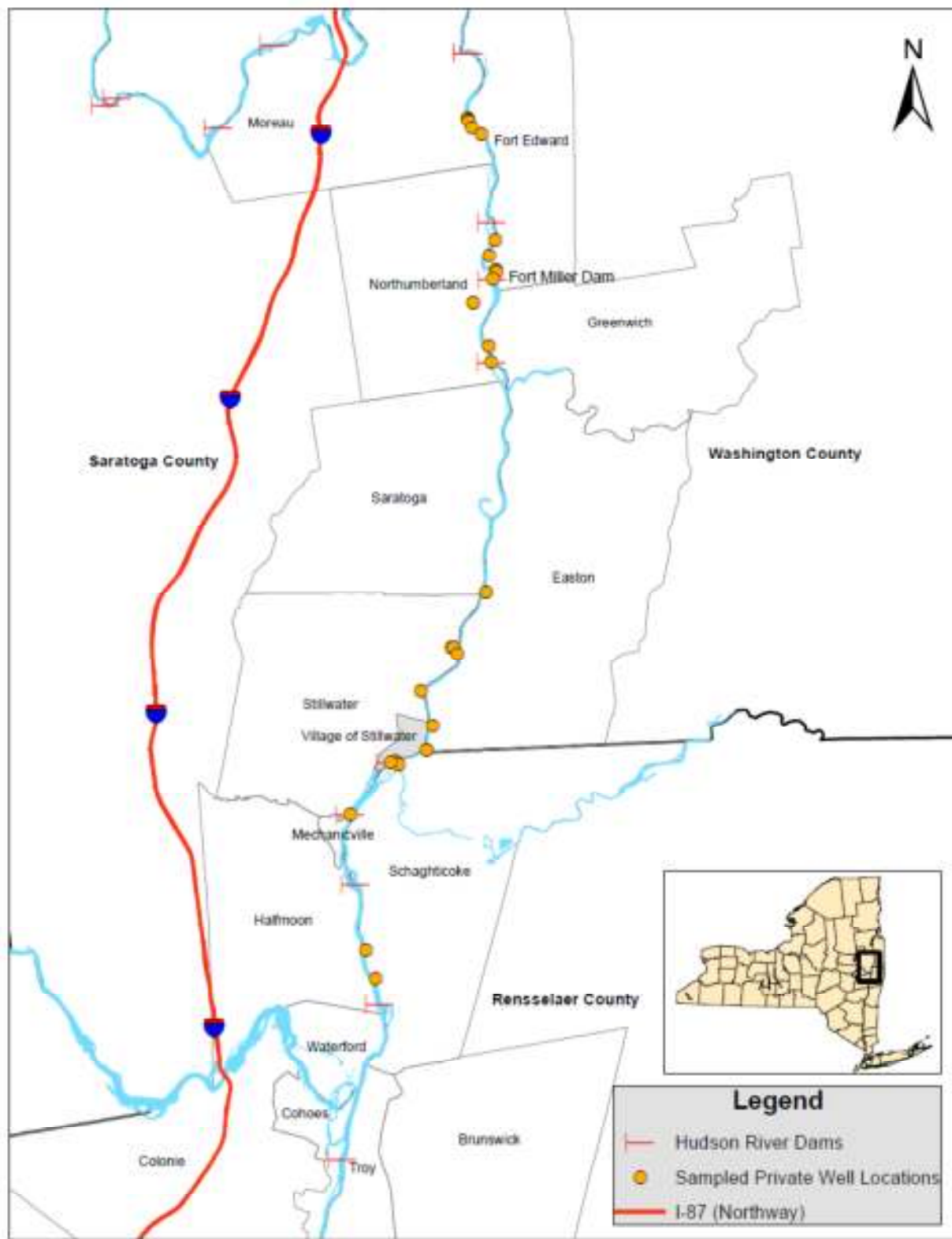
Attachments: Figure 1

cc: K. Anders / eFILE
T. Johnson
T. Foster – ATSDR
L. Graziano – ATSDR

Reference

ATSDR (Agency for Toxic Substances and Disease Registry). 2013. Drinking Water Comparison Values from ATSDR's Sequoia Database. March 2013.

Figure 1. Locations of private wells sampled during the private well survey conducted in 2009 and 2011 along the Upper Hudson River of New York State.



REPORT PREPARATION

This Health Consultation for the Hudson River PCBs site was prepared by the New York State Department of Health under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with the approved agency methods, policies, procedures existing at the date of publication. Editorial review was completed by the cooperative agreement partner. ATSDR has reviewed this document and concurs with its findings based on the information presented. ATSDR's approval of this document has been captured in an electronic database.

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