

Letter Health Consultation

DEVIL'S SWAMP LAKE SITE

EAST BATON ROUGE PARISH, LOUISIANA

**Prepared by the
Louisiana Department of Health and Hospitals**

NOVEMBER 25, 2009

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

Health Consultation: A Note of Explanation

A health consultation is a verbal or written response from ATSDR or ATSDR's Cooperative Agreement Partners 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 or ATSDR's Cooperative Agreement Partner 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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EAST BATON ROUGE PARISH, LOUISIANA

Prepared By:

Louisiana Department of Health and Hospitals
Office of Public Health
Under Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry



Bobby Jindal
GOVERNOR

**STATE OF LOUISIANA
DEPARTMENT OF HEALTH AND HOSPITALS**



Alan Levine
SECRETARY

October 30, 2009

Lafayette Harrison
706 New Rafe Meyer Rd.
Baton Rouge, LA 70807

Dear Mr. Harrison:

Per your request, the Louisiana Department of Health and Hospitals/Office of Public Health/Section of Environmental Epidemiology and Toxicology (LDHH/OPH/SEET) has evaluated ground water data from the Scenic Highway, Jetson and Layton municipal drinking water wells collected during routine monitoring events in East Baton Rouge Parish, Louisiana. The following letter provides the results of SEET's assessment of the sampling conducted during those events.

Site Description and History

On April 23, 2009, SEET staff attended a community meeting in Alsen, LA hosted by the US Environmental Protection Agency (EPA). Residents of the Alsen community requested the meeting to present their health concerns regarding the Devil's Swamp Lake (DSL) site, which is currently proposed to the National Priorities List (NPL). Representatives from EPA's Superfund Division presented an update of the current status of the listing and allotted time for members of the Louisiana Department of Environmental Quality (LDEQ) and LDHH to present the DSL fish consumption advisories and to address questions from the community. During the question and answer period, residents expressed concern about drinking water quality. It was stated that there are two municipal wells that service the area, and there is concern that the DSL site may be impacting the water quality of the wells. SEET agreed to contact the LDHH Safe Drinking Water Program (SDWP) to obtain and evaluate the most recently collected samples from any wells serving the Alsen community [1].

Data Evaluation

There are three municipal wells serving the Alsen community; Scenic Highway, Jetson and Layton wells. The Scenic Highway and Jetson wells serve as primary stations for the community, while the Layton station rarely serves residents in Alsen; rather it acts as a backup well. EPA requires that all municipal wells be source sampled every three years; this action is carried out by the Baton Rouge Water Department (BRWD) under the supervision of the LDHH SDWP.

As reported by BRWD, all three wells are drawn from the Southern Hills Aquifer (also known as the Jasper Equivalent Aquifer), which underlies the Alsen service area at depths reaching 2400 feet. The BRWD also reports that the Southern Hills Aquifer is not geologically or hydrologically connected to Bayou Baton Rouge, Devils Swamp or Devils Swamp Lake. A SEET-generated site map in appendix A illustrates the well locations in relation to the DSL site. Surface water flow lines and approximate elevations demonstrate water flows from the municipal wells towards the DSL site.

Scenic Highway Well

The BRWD conducted routine water sampling at the Scenic Highway well (as required by the LDHH SDWP) on March 30, 2009. Samples were collected at the well head before treatment and

were analyzed for pesticides, inorganics (metals, salts), total nitrates/nitrites, essential nutrients and water parameters including pH, conductivity and total hardness as calcium carbonate. All detected concentrations of Iron, Fluoride, Sulfate, Manganese, Sodium and Potassium were below the Agency for Toxic Substances and Disease Registry's (ATSDR) child Reference Media Evaluation Guide (RMEG) or other comparison values (CVs) (Appendix A, Table 1). Furthermore, the United States Geological Survey (USGS) cites general guidelines for classification of calcium carbonate (total hardness) in water [2]. Based on these guidelines, water from the scenic highway well is classified as soft. Soft water is free of dissolved calcium and/or magnesium. A detailed explanation of the ATSDR/SEET evaluation process can be accessed in Appendix A.

Jetson Well

SEET reviewed data from the last three sampling events conducted by the BRWD at the Jetson well; including data from January 19, 2005, July 10, 2006 and December 13, 2007. Samples were collected at the well head before treatment and were analyzed for pesticides, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) metals, salts, total nitrates/nitrites, essential nutrients and water parameters including pH, and conductivity. Fluoride, Arsenic and Barium were detected on varying dates at concentrations below health-based comparison values (Appendix A, Table 2).

Layton Well

The BRWD conducted routine monitoring at the Layton well on June 8, 2009. Samples were collected at the well head before treatment and were analyzed for pesticides, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) metals, salts, total nitrates/nitrites, essential nutrients and water parameters including pH, conductivity and total hardness as calcium carbonate. There were no contaminant concentrations detected above health-based comparison values (Appendix A, Table 3). Furthermore, USGS guidelines classify water from the Layton well as soft. As noted above, soft water is free of dissolved calcium and/or magnesium.

Exposure Pathways

The Scenic Highway, Jetson and Layton wells serve as primary and secondary drinking water sources for the Alsen community. Each of the three wells is routinely monitored by the Baton Rouge Water Department as scheduled by LDHH's Safe Drinking Water Program. Detected concentrations of contaminants were below drinking water comparison values at each sample location and will not harm people's health.

Conclusions:

Contaminant concentrations detected in the Scenic Highway, Jetson and Layton wells were below comparison values and will not harm people's health.

Public Health Actions:

No public health actions are needed at this time.

If there are any questions regarding this health consultation, please contact Darcie Olexia (504) 219-4579.

Sincerely,

Darcie Olexia, MSPH
Environmental Health Scientist
Louisiana Office of Public Health
Section of Environmental Epidemiology & Toxicology

Cc: Glenn Cambre, Center for Environmental Health Services
Karen Irion, LDHH Safe Drinking Water Program

Appendix A: Screening Process

Health based comparison values (CVs) were used to determine which samples needed further evaluation. CVs are not used to predict health effects or to set clean-up levels. Contaminants with media concentrations above a health based comparison value do not necessarily represent a health threat, but are selected for further evaluation. Contaminants with media concentrations below a health based comparison value are unlikely to be associated with illness and are not evaluated further.

The Agency for Toxic Substances and Disease Registry's (ATSDR) child Environmental Media Evaluation Guide (EMEG) and child Reference Dose Media Evaluation Guide (RMEG) were used as CVs in this evaluation. EMEGs are estimated contaminant concentrations that are unlikely to cause adverse non-carcinogenic health effects. EMEGs are calculated by using ATSDR's Minimal Risk Level (MRL), which is also an estimate of daily exposure to contaminants that are unlikely to cause adverse non-cancer health effects. Like EMEGs, RMEGs represent concentrations of substances in water to which humans may be exposed without experiencing adverse health effects. RMEGs are calculated using EPA's reference dose (RfD), an estimate of daily exposure to contaminants unlikely to elicit a non-cancer health effect.

EPA's Maximum Contaminant Level (MCLs) and National Secondary Drinking Water Regulations (NSDWRs or secondary standards) were also used as CVs in this evaluation. An MCL is an enforceable drinking water regulation that is the maximum permissible level of contaminant in water that is delivered to the free-flowing outlet of the ultimate user of a public water system. NSDWRs are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply [3].

USGS general guidelines for classification of waters are: 0 to 60 mg/L (milligrams per liter) as calcium carbonate is classified as soft; 61 to 120 mg/L as moderately hard; 121 to 180 mg/L as hard; and more than 180 mg/L as very hard [2].

The Institutes of Medicine (IOM) has set an Adequate Intake (AI) for potassium at 4.7 grams per day (g/day) for all adults. This level of dietary intake should maintain lower blood pressure levels, reduce the adverse effects of sodium chloride intake on blood pressure, reduce the risk of recurrent kidney stones, and possibly decrease bone loss [5]. The AI for sodium for older adults and the elderly is set at 1.3 g/day for men and women 50 through 70 years of age, and at 1.2 g/day for those 71 years of age and older [5].

Table 1: Scenic Highway Well

Detected Contaminant	Sample Collection Date	Concentration (mg/L) ¹	Comparison Value
Iron	3/30/09	0.02	0.3 mg/L ²
Fluoride	3/30/09	0.1	4 mg/L ³
Sulfate	3/30/09	7.0	250 mg/L ²
Manganese	3/30/09	0.01	0.5 mg/L ⁴
Sodium	3/30/09	82.6	1300 mg/day ⁵ [4]
Potassium	3/30/09	0.57	4.7 g/day ⁵ [4]
Total Hardness (as CAC03)	3/30/09	6.0	USGS [2]

¹mg/L- milligrams per liter; ² national secondary drinking water regulation; ³ Maximum Contaminant Level; ⁴ child Reference Dose Media Evaluation Guide; ⁵ mg/day-milligrams per day

Table 2: Jetson Well

Detected Contaminant	Sample Collection Date	Concentration	Comparison Value
Fluoride	7/10/06	0.19 mg/L ¹	4 mg/L ²
Arsenic	12/13/07	0.001 mg/L	0.003 mg/L ³
Barium	7/10/06	0.01 mg/L	2 mg/L ³

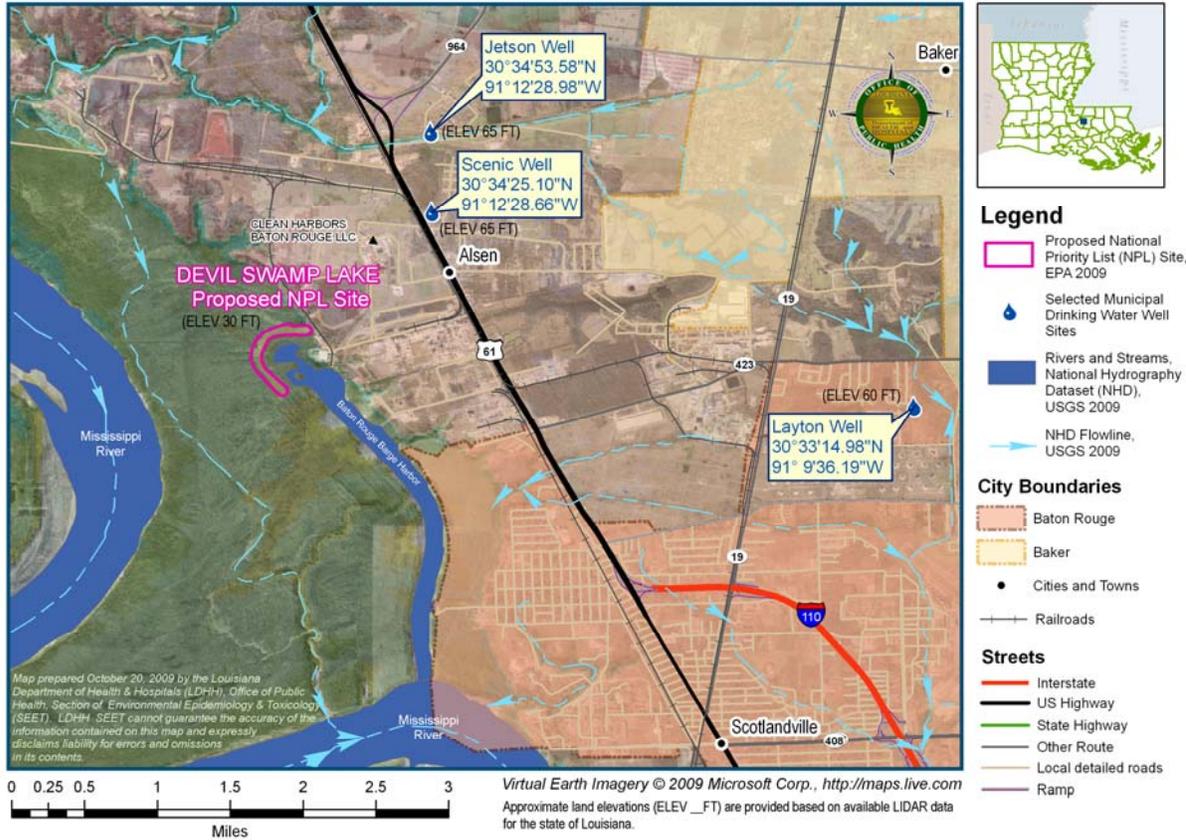
¹mg/L- milligrams per liter; ² Maximum Contaminant Level; ³ Child Environmental Media Evaluation Guide

Table 3: Layton Well

Detected Contaminant	Sample Collection Date	Concentration(mg/L) ¹	Comparison Value
Iron	6/8/09	0.01	0.3 mg/L ²
Sulfate	6/8/09	12.00	250 mg/L ²
Manganese	6/8/09	0.01	0.5 mg/L ³
Fluoride	6/8/09	1.3	4 mg/L ⁴
Aluminum	6/8/09	0.01	10 mg/L ⁵
Sodium	6/8/09	134.8	1300 mg/day ⁶ [4]
Potassium	6/8/09	1.1	4700 mg/day ⁶ [4]
Total Hardness (as CAC03)	6/8/09	2.8	USGS [2]

¹mg/L- milligrams per liter; ² national secondary drinking water regulation; ³Child Reference Dose Media Evaluation Guide; ⁴ Maximum Contaminant Level; ⁵child Environmental Media Evaluation Guide; ⁶ mg/day- milligrams per day

Devil's Swamp Lake EPA Proposed NPL Site Proximity to Area Municipal Drinking Water Wells

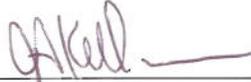


References

1. Louisiana Department of Health and Hospitals, Safe Drinking Water Program. Raw Data transmitted to Darcie Olexia from Brandon Taylor, LDHH, via email on August 25, 2009.
2. United States Geological Survey. Water Hardness and Alkalinity. Accessed at URL: <http://water.usgs.gov/owq/hardness-alkalinity.html> on September 21, 2009 by Darcie Olexia.
3. United States Environmental Protection Agency. Regulating Public Water Systems and Contaminants Under the Safe Drinking Water Act. Accessed at URL: <http://www.epa.gov/safewater/standard/setting.html> on September 22, 2009 by Darcie Olexia.
4. Institutes of Medicine (IOM) (2004). Dietary Reference Intakes for water, potassium, sodium, chloride, and sulfate. National Academies Press. Accessed at URL: http://books.nap.edu/catalog.php?record_id=10925#toc on September 28, 2009 by Darcie Olexia.

Certification

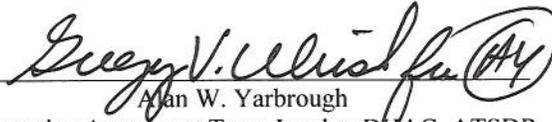
This Alsen Community drinking water letter health consultation was prepared by the Louisiana Department of Health and Hospitals under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures at the time the health consultation was begun. The editorial review was conducted by the Cooperative Agreement Partner.



Jeffrey Kellam

Technical Project Officer, Division of Health Assessment and Consultation (DHAC)

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.



Alan W. Yarbrough
Cooperative Agreement Team Leader, DHAC, ATSDR