

**PUBLIC MEETING**  
**UPDATE ON BOTTLED WATER DISTRIBUTION, WELL WATER QUALITY, AND**  
**HOME WATER TREATMENT SYSTEM MAINTENANCE**

**May 28, 2016 10:00 AM**

**Bohemia Manor High School**  
**2755 Augustine Herman Hwy.**  
**Chesapeake City, MD 21915**

**1.0 Welcome & Introduction**

**Stephanie Garrity (CCHD)**

Ms. Garrity, from the Cecil County Health Department (CCHD), welcomed the attendees to the meeting and introduced the elected and state officials who were in attendance, which included Cecil County Council Vice President Alan McCarthy, Al Wein representing Cecil County Executive Tari Moore, Mary O’Keeffe representing Congressman Andy Harris, State Delegates Steve Arentz, Jay Jacobs, and Jeff Ghrist, Cecilton Mayor Joe Zang, Secretary of the Maryland Department of the Environment (MDE) Ben Grumbles, and Deputy Secretary of the Maryland Department of Health and Mental Hygiene (DHMH) Howard Haft. Ms. Garrity explained that the meeting was held on Memorial Day weekend in an effort to reach seasonal residents returning to the area, and the CCHD did not want to delay the delivery of information to the communities.

Ms. Garrity gave a brief background on the reason for the public meeting. In 2013 the CCHD sampled residential wells upon request subsequent to the release of a US Geological Survey (USGS) report that indicated the groundwater had been degraded within the vicinity of the Pearce Creek Dredged Material Containment Facility (DMCF). Following the CCHD sampling, well owners were provided guidance in accordance with the current established Environmental Protection Agency (EPA) drinking water guidelines and standards for public drinking water supplies. The CCHD had concerns that some of the chemicals tested, which are more typically associated with aesthetic taste and odor concerns, were present at high levels, and sent the residential well sampling results to the federal Centers for Disease Control (CDC), Agency for Toxic Substances and Disease Registry (ATSDR) in 2014. On May 9, 2016, the ATSDR expressed a concern to the CCHD and MDE regarding the levels of manganese found in some of the samples. Individual residential water treatment systems can be effective in reducing manganese concentrations in drinking water to acceptable levels, but proper and routine maintenance of the treatment system is required. While the ATSDR completes its review of the well water data, the CCHD believes that bottled water for the Pearce Creek area residents is the best method to protect public health.

**2.0 Manganese Concerns**

**Ginny Kearney (MDE)/Karl Markiewicz (CDC-ATSDR)**

Ms. Kearney, the Deputy Director of the Water Management Administration of MDE, echoed the comments made by Ms. Garrity and stated that manganese is not a regulated contaminant; however, information provided by the ATSDR motivated the decision to provide the residents with bottled water and is believed to be in the best interest of the Pearce Creek residents. Subsequent to MDE receiving notification from the ATSDR in a conference call with CCHD and the DHMH, the decision for bottled water advisement was made and the Maryland Port Administration (MPA) and US Army Corps of Engineers (USACE) were notified.

Dr. Markiewicz, a toxicologist from the ATSDR, stated that the ATSDR investigates environmental data, and public health recommendations are made based on the available information. After evaluating the Pearce Creek area residential well data, a health concern was expressed specifically for manganese levels for infants and young children. ATSDR will release a comprehensive report at a later date that will contain the full health consultation examining all the chemicals tested in the well water. Manganese levels were shown to be a “risk driver” in the Pearce Creek well data, which caused the public health recommendation regarding bottle water to be made. Dr. Markiewicz stressed that the circumstances at Pearce Creek are not the same as Flint, Michigan. Manganese is an essential element that is needed in small amounts for the normal health and development of the nervous system, bone growth, and enzyme functions. The potential toxicity comes from too much manganese. For instance, acute (short term) exposures are not likely to have an effect at the levels seen in private well water in this area, but chronic (long term) exposures of 5-10 years could have an effect on young children (5 years old and younger, including infants) at levels between 300-500 parts per billion (ppb) or greater. Manganese is a naturally occurring element. There are many wells in the area that are well above a manganese concentration of 500 ppb.

Public health determinations are made by evaluating the information provided in the available toxicological literature. There is a growing body of evidence that suggests manganese can cause neurological issues in young children (i.e. memory, motor activity). The EPA lifetime health advisory level for manganese is 300 ppb. Private water well sampling data from the Pearce Creek area indicated that some of the treated and untreated water exceeded 300 ppb and that a high level of variability exists within the data set. ATSDR is not able to confirm which residents were exposed to these high levels with the information provided at this time, but a residential water treatment system is usually effective in reducing the concentrations of manganese. If children and infants were drinking the water over time at a level between 300-500ppb then there is concern. The Margin of Safety defines the range between safe and detrimental levels of a substance, which is fairly narrow for manganese. The studies show that manganese does not cause cancer. Fumes and dust exposure from manganese in an industrial setting can cause Parkinson’s Disease-like effects, but scientific literature does not suggest those types of effects can occur from ingestion (i.e. drinking or eating foods that have been prepared with water that has high amounts of manganese). The limited studies also indicate no signs of neurological issues in pets. The main concern for the Pearce Creek area residents is ingestion; dermal exposure (e.g., contact with the water by bathing, swimming) will not have any detrimental effects. A report summarizing ATSDR’s public health review of the manganese levels in private well water in the Pearce Creek area is available at: [http://www.atsdr.cdc.gov/HAC/pha/PearceCreek/Pearce\\_Creek\\_DMCA\\_LHC\\_05-27-2016\\_508.pdf](http://www.atsdr.cdc.gov/HAC/pha/PearceCreek/Pearce_Creek_DMCA_LHC_05-27-2016_508.pdf).

MDE Secretary Ben Grumbles, speaking on behalf of Governor Hogan, stated that the Pearce Creek water issues are very important to the Governor and that MDE and DHMH will be working closely with the local and federal officials to reach a resolution. DHMH Deputy Secretary Howard Haft stated that they will be working with the state and federal partners to ensure the health and safety of those living in the State of Maryland.

### ***Manganese Q&As***

Councilman Alan McCarthy asked, regarding the public safety concern, why it took so long between the time the samples were taken and when the public health determination was made. Dr. Markiewicz replied that the collection of samples and subsequent testing takes some time, but the majority of the time is spent evaluating the results of the data. During the data evaluation process, all the constituents

are investigated and it is an emerging science trying to determine at which point exposure to substances become a concern. Mr. Mank, a toxicologist from MDE, stated that the variability in the data set and different residential water treatment systems made it difficult to find solid answers.

Councilman McCarthy stated that there are three aquifers that residents could derive their water from and asked if other constituents had any cumulative or enhancing effects on manganese. Dr. Markiewicz replied that the manganese effects were not amplified by other constituents detected in the private well water. The effects of increased manganese concentrations in water are often observed via changes in color (black rings in toilets, etc.) and taste. Water softeners can be used to decrease manganese concentrations, but they can increase sodium levels, which may be an issue to those with dietary sodium restrictions.

Mr. Lavin asked if the manganese toxicity can affect children permanently. Dr. Markiewicz replied that there is not a lot of literature available to give a firm answer, but long term effects have not been seen after intake of high amounts of manganese has ceased. About 30% of manganese leaves the human body in a few days, the remaining amount takes a few weeks to a few months to be removed. The current goal is to minimize exposure, which is being achieved by the bottled water and construction of the public water system. Mr. Lavin asked how to identify manganese in the drinking water, especially when it is at dangerous levels. Dr. Markiewicz replied that the taste will change and black staining can occur, but the best way to determine the manganese concentrations is to have the water tested, which is the responsibility of the resident. Ms. Kearney stated that in regards to the regulatory process for public drinking water, a series of potential pollutants are identified by EPA, and toxicity studies are reviewed, which then leads to regulations where a Maximum Contaminant Level (MCL) is established for each constituent. Private wells are not subject to these regulations and cannot be enforced by MDE. The new public water system will be regulated and have no manganese issues. Mr. Mank reiterated that bottled water is encouraged for both drinking and cooking, but the well water is suitable for every other use. Ms. Garrity stated that the CCHD can send samples to a lab for testing, which will cost \$20. It is recommended that residents with private wells test their water twice a year and when changes are noticed.

A meeting attendee asked, regarding an untreated water source, if daily exposure from a bath or teeth brushing was an issue. Dr. Markiewicz stated that activities such as bathing, teeth brushing, or a sip of water, etc. will not be an issue. Ingestion of a liter (approximately 4 cups) of water a day at those high levels for infants/young children over many years is the primary concern. Regarding dermal (skin contact) exposure, studies have shown that the skin is an effective barrier at protecting against many constituents, including manganese. Ingestion is the main source of exposure. An attendee asked about the effects on the nervous system and damage to the myelin sheath. Dr. Markiewicz replied that there has been not been a correlation established based on the limited literature that is currently available. Another attendee asked about eye exposure to which Dr. Markiewicz replied that there is not an issue with manganese in water and eye exposure.

An attendee expressed a concern regarding the spring 2018 waterline completion date, and requested that the construction be expedited. Mr. Chris Rogers from AECOM, the Town of Cecilton's water system contractor, stated that based on the construction contracts that have been established, construction of the transmission main (the waterline from the Town of Cecilton to the communities) and the distribution main (the waterlines within the communities) are on schedule and will take about a year to complete. The on-lot work will begin once the distribution system is in place. The current contracts

were developed before the manganese issue was known and they were not scheduled to be accelerated. Dr. Markiewicz stated that the main concern is mitigation of exposure to the high levels of manganese; hence the bottled water solution until the water system is complete. Secretary Grumbles stated that there was importance in the immediate limitation of exposure. Governor Hogan, the Maryland Port Administration (MPA), and MDE are going to look for ways to accelerate the construction schedule and ensure that the completion date is not delayed.

A meeting attendee inquired about the office trailer for the waterline construction and asked if the residents should expect to see any additional trailers. Mr. Rogers replied that there is one trailer which is present in Bay View Estates (BVE) and is required per the transmission main contract; no other trailers are necessary. A meeting attendee expressed concern about the lack of notification and communication regarding the installation of the trailer. Mr. Rogers stated that bimonthly Pearce Creek Implementation Committee (PCIC) meetings are held in an effort to maintain consistent communication with the Pearce Creek communities. Ms. Kristen Keene stated that PCIC meetings are held every two months on the 3<sup>rd</sup> Friday at the Parklands Building in Cecilton. The PCIC meetings are open to the public and are used to provide updates regarding both the waterline and DMCF liner construction progress. There is also a newsletter, which residents can subscribe to and receive pertinent project information and meeting dates. The Pearce Creek outreach website ([www.pearcecreekoutreach.com](http://www.pearcecreekoutreach.com)) also contains a significant amount of project information (e.g. timelines, meeting minutes, agendas, presentations). If internet access is not available, please contact Ms. Keene for a hard copy of meeting and project information. Overall, the primary goal is to maintain transparency and continued outreach to the communities.

Mr. Soly asked about the correlation between the ppb water concentration and the grams per liter exposure rate. Dr. Markiewicz stated that usually toxicologists use milligrams per kilogram of body weight/day for determining toxic concentrations and gave an example; the full document will explain the calculations between the different types of concentration expressions. Mr. Mank stated that the manganese levels to remember are 0.3 milligrams per liter or 300 micrograms per liter; any concentration below that number should not be of concern. Dr. Markiewicz stated that manganese has a secondary MCL of 50 ppb, which individuals can drink without any concern. The full report will show the data that was analyzed. Ms. Kearney noted that the data that was analyzed by the ATSDR was the data collected by the CCHD; no new data collection has occurred. Ms. Kearney directed residents to contact Fred von Staden (CCHD) for a refresher on the 2013/2014 well sampling information.

### **3.0 Maintenance of Home Treatment Systems**

**Ellen Frketic (MES)**

Ms. Frketic stated that individuals with water treatment systems must be vigilant in regards to maintenance. Ion Exchange units and softeners remove many of the ions and manganese in the water. Carbon filters also work well to remove manganese, especially if the softener is placed in front of the carbon filter. In-home water treatment systems will not be needed once the new waterline is complete. An attendee asked what would happen to the wells once the new system was hooked up to the houses and another attendee asked about keeping wells for the purposes of watering gardens and lawns. Ms. Kearney replied that MDE requires residential wells to be abandoned once the public water system is in place due to the potential for cross contamination. The cost of well abandonment and disconnection will be paid by MPA. Mayor Zang noted that the Town of Cecilton's water system can easily accommodate the expanded service area to the Pearce Creek residents. All wells must be abandoned and capped to prevent cross contamination, and eliminate any possible issues. If anyone has any questions, Mayor

Zang's contact information is available on the Pearce Creek outreach website ([www.pearcecreekoutreach.com](http://www.pearcecreekoutreach.com)). Ms. Frketic stated that information regarding MDE certified well testing is located on the back of the water system pamphlet.

#### **4.0 Overview of Bottled Water Distribution**

**Kristen Keene (MES)**

Ms. Keene, speaking on behalf of the MPA, stated that MPA is funding the free delivery of bottled water to Pearce Creek area residents for the next couple of months until the US Army Corps of Engineers Philadelphia District (CENAP) is able to complete their procurement process and assume the funding. Free bottled water will continue to be provided until the waterline is complete and online. Eastern Shore Coffee & Water has been selected as the water distribution company, and the company the water is sourced from is Drink More Water. Subsequent to completing and submitting a customer data form, the water company will generate an estimate of the amount of water that will be delivered to each household based on the number of occupants (assume one gallon of water per person per day). There are two free water delivery options residents can choose from including five gallon bottles, which require a water cooler (coolers can be leased at the expense of the resident for \$6.95 a month), or a case of six one gallon bottles. If a resident chooses to elect the five gallon bottle option, it is the responsibility of the resident to maintain and return the bottles to the water delivery company when they become empty; residents will be charged \$6/bottle for unreturned five gallon bottles. The empty five gallon bottles can be left on the porch/driveway for pickup, or at another location on the residential property as agreed to by the resident and the delivery personnel. The one gallon bottles can be appropriately disposed of by the resident. Any bottles received damaged upon delivery will be replaced at no charge. The delivery schedule will begin the week of May 31<sup>st</sup>; the delivery company does not require that all residents sign up to commence delivery. Ms Keene stated that customer data forms were available to complete and submit at today's meeting and will be mailed to each resident next week as well. Delivery will occur six times a month once all residents have enrolled. The amount of water received can be adjusted to accommodate the needs to every household; residents can contact the water company directly to make the necessary adjustments. Seasonal residents should indicate when they will not be in residence, and those going on vacation can inform the delivery company to postpone delivery for the residents' time away. Residents will receive a call the day before the delivery is scheduled to occur. If residents are home at the time of delivery, the water company can bring the water inside the home, if requested; if residents will not be home at the time of delivery, indicate in the designated area on the customer data form the preferred location where the bottles should be left. Ms. Keene informed the attendees that representatives from the Eastern Shore Coffee & Water company were available outside the building with water for distribution; any remaining water would be sent to pre-designated water drop-off locations in BVE and West View Shores (WVS).

#### ***Bottled Water Q&A's***

An attendee asked if residents could switch between the two water options, and Ms. Keene replied yes. Ms. Keene added that if more or less water is needed, those adjustments can also be made. The water is intended for both drinking and cooking and will be provided to all residents until the new water system is completed and the resident can turn on their tap. MPA will be financing the first two months and then CENAP will take over financing.

An attendee asked if the water bill under the new water system would be volume based. Mayor Zang replied that there will be a minimum bill for the minimum use (5,000 gallons) and then a charge per

1,000 gallons, which will be billed quarterly. Ms. Keene noted that there are examples of the monthly water costs on the Pearce Creek Outreach website ([www.pearcecreekoutreach.com](http://www.pearcecreekoutreach.com)).

**Adjourn**