City of Highland Park Water Utility
FACT SHEET
Hexavalent Chromium

UPDATE: September 21, 2016

In accordance with the recommended protocol issued by the USEPA in January 2011, the City instituted a monitoring plan for Hexavalent Chromium. The quarterly results for 2011 and 2012 are listed in the table below.

	Raw (Lake) Water	Finished (Treated) Water	Distribution system "maximum residence time" representative samples	
			Sample #1	Sample #2
2011 - 1st Quarter	0.20 ppb	0.21 ppb	0.15 ppb	0.21 ppb
2011 - 2nd Quarter	0.09 ppb	0.19 ppb	0.17 ppb	0.14 ppb
2011 - 3rd Quarter	0.26 ppb	0.23 ppb	0.20 ppb	0.23 ppb
2011 - 4th Quarter	0.24 ppb	0.19 ppb	0.16 ppb	0.24 ppb
2012 - 1st Quarter	0.30 ppb	0.21 ppb	0.23 ppb	0.24 ppb
2012 - 2nd Quarter	0.31 ppb	0.24 ppb	0.26 ppb	0.30 ppb
2012 - 3rd Quarter	0.43 ppb	0.23 ppb	0.23 ppb	0.28 ppb
2012 - 4th Quarter	0.38 ppb	0.17 ppb	0.18 ppb	0.20 ppb

Based on this initial study, the USEPA decided to include Hexavalent Chromium in their Unregulated Contaminant Monitoring Rule, Phase 3 (UCMR3).

Every five years, in accordance with the Safe Drinking Water Act, the USEPA identifies a new list of contaminants that are suspected to occur in public water systems. This list is referred to as the Unregulated Contaminant Monitoring Rule (UCMR). A maximum contaminant level (MCL) for these contaminants have not been established by either state or federal regulations, nor has mandatory health effects language been set. The purpose of unregulated contaminant monitoring is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Public Water Systems were required to sample for the UCMR3 contaminant list quarterly during a 12 month period from January 2013 through December 2015. As of July 2016, this dataset is not complete as data is expected to be reported to the USEPA through the end of summer 2016. Highland Park's quarterly results for 2013 and 2014 are listed in the table below.

	Finished (Treated) Water	Distribution system "maximum residence time" representative samples
2013 - 3rd Quarter	0.19 ppb	0.28 ppb
2013 - 4th Quarter	0.25 ppb	0.25 ppb
2014 - 1st Quarter	0.23 ppb	0.23 ppb
2014 - 2nd Quarter	0.24 ppb	0.10 ppb

These results are well below the present 100 ppb federal standard for (total) Chromium, which includes Hexavalent Chromium.

Decisions as to whether or not to regulate the contaminant in drinking water will continue to be made following the USEPA's Regulatory Determination process.

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As noted below, the USEPA has undertaken a formal *Toxicological Review of Hexavalent Chromium* upon which future policy decisions, including drinking water regulations, will be based. The draft study (288 pages, PDF format: http://oaspub.epa.gov/eims/eimscomm.getfile?p_download_id=498828) was released in September 2010. Based on the recommendation of the external peer review panel, which met in May 2011, the USEPA will review original primary research related to the health effects of hexavalent chromium that has been published since the release of the draft assessment for external peer review and will incorporate the findings as appropriate into its hexavalent chromium assessment.

On December 20, 2010 the Washington, DC Environmental Working Group issued a press release announcing detection of Hexavalent Chromium (Chromium-6) in 31 of 35 municipal water supplies that they tested nation-wide. Chicago and Milwaukee were among these, each measured at 0.160 parts per billion (ppb).

- **What is Hexavalent Chromium?**
  Chromium is an odorless and tasteless metallic element, which is found naturally in rocks, plants, soil and volcanic dust, and animals. Chromium can occur in various forms, but Trivalent Chromium and Hexavalent Chromium are the most common forms found in the environment.

  Trivalent Chromium or Chromium-3 occurs naturally and is a mineral essential to human health. It can be found in air, water, rocks, soil, and food items, such as broccoli, cheese, meats, cereal, brewer's yeast, whole grains, and mushrooms.

  Industrial processes produce Hexavalent Chromium or Chromium-6. In this form, Chromium has been linked to severe health problems, including lung cancer and cancer of the septum in the nasal passage. Chromium-6 can find its way into the environment if the industries that use Chromium mismanage their waste streams.

- **Is the water in Highland Park tested for this substance?**
  Highland Park's water is tested annually by an independent State certified laboratory for Total Chromium (all species including Hexavalent Chromium). To date, no Chromium has been detected. The certified laboratory's detection limit for Total Chromium is 4 ppb.

- **Standards for Chromium-6?**
  Total Chromium, which includes Hexavalent Chromium, is federally regulated with a Maximum Contaminant Level (MCL) of 100 ppb. California has set a MCL of 50 ppb for Total Chromium (1/2 the USEPA limit).

  USEPA does not have a MCL for Hexavalent Chromium. On August 23, 2013, California proposed a Hexavalent Chromium specific MCL of 10 ppb. This MCL was promulgated in July 2014.

  On July 27, 2011 the California EPA established a "Public Health Goal (PHG)" of 0.02 ppb of Hexavalent Chromium in drinking water. This health goal is the first in the nation. This Goal is 1/5,000th of the present national standard.

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USEPA is currently evaluating new health effects data on Hexavalent Chromium. The City is prepared to respond in a way that protects public health and meets federal and state standards.
(See the summary of the USEPA *Toxicological Review of Hexavalent Chromium* at: http://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=221433)

The primary mission of the City's water utility is to provide the safest possible drinking water for the citizens of Highland Park and to meet or exceed federal drinking water purity standards. As new regulations are developed, the City will implement treatment technology necessary to fulfill this mission.

For more information contact the Water plant Superintendent, Don Jensen (djensen@cityhpil.com 847-433-4355)

References:

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