

Attachment 6B: Sample Results Letter to the Parent of a Participant (6 to <18 Years of Age) – Total Arsenic Above Follow-up Level, Organic Arsenic Not Elevated, Inorganic Arsenic Elevated
Flesch-Kincaid Reading level – 10.7

(ATSDR Letterhead)

DATE _____

Name XXXXX

Address XXXX

Address XXXX

Dear _____ [Parent Name] _____,

Thank you for letting [NAME OF CHILD] participate in the second Exposure Investigation in Winkelman, Arizona in MONTH, YEAR. The goal is to find out whether people living in Hayden and Winkelman, AZ are being exposed to arsenic.

Your child's inorganic arsenic results were above the investigation follow up level. ATSDR will call you within 2 weeks to discuss your child's results. We recommend you contact your child's doctor to discuss the results and determine if retesting is appropriate.

This package contains the results of your child's urine arsenic test from the current investigation and for comparison, also contains [his/her] results from the initial investigation conducted in April 2015, if applicable.

Results above the investigation exposure follow-up level appear in **bold**.

In this package, you can find:

- Test Results: Your child's arsenic test results from 2015, if applicable, and [Current investigation YEAR]
- What It Means: An explanation of what the YEAR results mean for your child's health
- Follow Up: Recommendations for following up on these results, if needed
- Factsheet: Tips to lower your child's exposure to arsenic

If you have questions about this Exposure Investigation or your child's test results, please contact me at 770-488-0771 or BTierney@cdc.gov.

Sincerely,

Bruce C. Tierney, MD

Lead Investigator, ASARCO Hayden Smelter Exposure Investigation

ATSDR Division of Community Health Investigations, Exposure Investigation Team

TEST RESULTS

Your Child's Total Urinary Arsenic Results, 2015

2015 Arsenic Test Results		
Arsenic Type	Your child's result *	Investigation Exposure Follow-Up Level *
Total Urine Arsenic	XX.X µg/g of creatinine** (or "Not Applicable" as appropriate)	28.4 µg/g creatinine †
<p>* Results are reported in micrograms per gram of creatinine (µg/g). Creatinine adjustment is a standard method we use to report the amount of arsenic measured in urine samples.</p> <p>** If your child's total urinary arsenic level was above 28.4 µg/g, further analysis was done to determine the amount of organic and inorganic arsenic in the total.</p> <p>† The total urine arsenic investigation exposure follow-up level is the lowest 95th percentile total urine arsenic value reported for all age groups in the 2009-2010 CDC National Health and Nutrition Examination Survey. The 95th percentile means that 95 percent of the population will have a value at or below the number indicated as the investigation exposure follow up level.</p>		

Your Child's Total Urinary Arsenic Results, [current investigation YEAR]

YEAR Arsenic Test Results		
Arsenic Type	Your child's result *	Investigation Exposure Follow-Up Level *
Total Urine Arsenic	XX.X µg/g of creatinine**	28.4 † ³
<p>* Results are reported in micrograms per gram of creatinine (µg/g). Creatinine adjustment is a standard method we use to report the amount of arsenic measured in urine samples.</p> <p>** Your child's total urinary arsenic level was above 28.4 µg/g so we did further analysis to find out the amount of organic and inorganic arsenic in the total.</p> <p>† The total urine arsenic investigation exposure follow-up level is the lowest 95th percentile total urine arsenic value reported for all age groups in the 2009-2010 CDC National Health and Nutrition Examination Survey. The 95th percentile means that 95 percent of the population will have a value at or below the number indicated as the investigation exposure follow up level.</p>		

Your Child's Organic Arsenic Results, [current investigation YEAR]

Since your child's total urine arsenic level was above the investigation exposure follow up level, we tested 3 types of organic arsenic (the most common types). Your child's organic arsenic results are shown below. [X] out of 3 of your child's organic arsenic test results were [not above] [above] the investigation exposure follow-up level. Results above the investigation exposure follow-up level appear in **bold**.

Organic Arsenic Type (Abbreviation)	Your Child's Result *	Investigation Exposure Level *,**
Arsenobetaine (AsB)	X.XX	Age specific 2009-2010 NHANES 95% value
Arsenocholine (AsC)	X.XX	Too low to detect
Trimethylarsine Oxide (TMAO)	X.XX	Too low to detect

* Results are reported in micrograms per gram of creatinine ($\mu\text{g/g}$). Creatinine adjustment is a standard method we use to report the amount of arsenic measured in urine samples.

** The follow-up level for each arsenic species is the 2009-2010 creatinine corrected 95th percentile level for the US population in the participants' age group (i.e. 6-11, 12-19, 20 + years). CDC. Fourth Report on Human Exposure to Environmental Chemicals, Updated Tables, Feb 2015. <http://www.cdc.gov/exposurereport/>

Your Child's Inorganic Arsenic Results, [current investigation YEAR]

Since your child's total urine arsenic level was above the investigation exposure follow up level, we tested for 4 types of inorganic arsenic. Your child's inorganic arsenic results are shown below. [X] out of 4 of your child's inorganic arsenic test results were [not above] [above] the investigation follow-up level. Results above the investigation follow-up level appear in **bold**.

Inorganic Arsenic Type (Abbreviation)	Your Child's Result *	Investigation Exposure Follow Up Level *,**
Arsenic Acid	X.XX	Too low to detect
Arsenous Acid (As3)	X.XX	Age specific 2009-2010 NHANES 95% value
Dimethylarsinic Acid (DMA)	XX.X	Age specific 2009-2010 NHANES 95% value
Monomethylarsonic Acid (MMA)	X.XX	Age specific 2009-2010 NHANES 95% value

* Results are reported in micrograms per gram of creatinine ($\mu\text{g/g}$). Creatinine adjustment is a standard method we use to report the amount of arsenic measured in urine samples.

** The follow-up level for each arsenic species is the 2009-2010 creatinine corrected 95th percentile level for the US population in the participants' age group (i.e. 6-11, 12-19, 20 + years). CDC. Fourth Report on Human Exposure to Environmental Chemicals, Updated Tables, Feb 2015. <http://www.cdc.gov/exposurereport/>

WHAT IT MEANS

What Your Child's Urine Arsenic Result Means

When arsenic gets into your body, it stays for a few days, and then most of it comes out through your urine. Your child's test results tell us about the most recent arsenic exposures your child experienced, but not about exposures from a week or even a year ago.

Since your child's total arsenic result was above the investigation exposure follow up level we further tested for organic and inorganic arsenic.

Arsenic comes in two types: organic and inorganic.

- **Organic arsenic doesn't usually cause health problems.** It's often found in fish and seafood, so eating fish or seafood before testing can increase your child's organic arsenic level.
- **Inorganic arsenic may cause health problems.** It's found in the environment and in some foods. In Hayden and Winkelman it is found in the air, in storm water in neighborhood arroyos, and in tailings piles. It can also be found in some foods like rice, and rice products (more information in Enclosure 1).

Your child's organic arsenic results

All of the organic arsenic species in your child's urine from this test date were below the investigation exposure follow up level.

This means that your child's organic arsenic results are similar to the results of most other children [his/her] age in the United States.

Your child's inorganic arsenic results

[Some] [All] of the inorganic arsenic species in your child's urine on this test date were [equal to] [above] the investigation exposure follow up level.

This means that [some] [all] of your child's inorganic arsenic results on this test date are higher than the results of most other children [his/her] age in the United States.

Will my child have health problems?

Inorganic arsenic levels above the investigation exposure follow-up levels **don't mean that your child will have health problems**. Health problems depend on the arsenic level, length of exposure, and age and health of the child.

Exposure to low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small corns or warts on the palms of the hands, soles of the feet, and the upper body.

In addition, scientists have seen some evidence that long-term exposure to inorganic arsenic in children may result in developmental effects like learning disabilities and behavioral issues.

Inorganic arsenic exposure over many years also raises the risk of cancer of the bladder, lung, liver, and skin.

FOLLOW UP

How to Follow Up on Your Child's Urine Arsenic Result

Based on these results, **ATSDR will call you within about 2 weeks of you receiving this packet to discuss your child's results**. In addition, we recommend you contact your child's doctor to discuss the results and determine if retesting is appropriate. Take this letter with you and encourage your doctor to contact ATSDR with questions.

Hayden and Winkelman have more environmental arsenic than most towns in the United States, so everyone can take steps to reduce their child's exposure to arsenic. Use the tips in Enclosure 1 to do so.

As always, if you have questions for ATSDR, please contact us at 770-488-0771 or by email at BTierney@cdc.gov.

Enclosures (Attachment 11 - Tips for Reducing Exposure to Arsenic)