



**City of YUMA**

Utilities Department  
Laboratory  
289 N. Figueroa Avenue  
Yuma, AZ 85364  
(928) 329-2893  
(928) 329-2896 fax

## **Annual Inorganic Chemical Analysis Report Agua Viva Water Treatment Plant**

The Samples for the inorganic analyses are collected in January.  
The Data is received by mid March.

### **Definitions**

**Primary Inorganic Chemicals** – Are chemicals, mainly metals, that the Environmental Protection Agency (EPA) has determined can cause health effects if present at the maximum contaminant level (MCL) over a period of time.

**Secondary Inorganic Chemicals** – No standards have been set by the EPA for these chemicals at this time. These are considered to be mainly of esthetic interest and do not present a health concern.

**MCL** – Maximum Contaminant Level. The maximum permissible level for a contaminant in water that is delivered to any user of a water system.

**Contaminant** – Any physical, chemical, biological, microbiological or radiological substance or matter in water.

**MDL – PQL – MRL – RL** – Minimum detection level – practical quantitation level – minimum reporting level – reporting level. The lowest measurable quantity of a contaminant that current laboratory instruments or technology can measure.

< -- This symbol indicates “less than” the number that appears to the right of it.

**ug/L** – micrograms per liter or parts per billion (ppb). Divide by 1000 to convert ug/L to mg/L.

**mg/L** – milligrams per liter or parts per million (ppm).

**ND** – Non-detectable. Rather than claiming a contaminant does not exist or is zero (0), laboratories report a contaminant is “non-detectable,” and report the result as less than (<) the reporting level for that particular contaminant.

**Analysis Method** – Are numbers that identify the specific procedure that was used to test for the contaminant.

**Contaminant Code** – Identifies the contaminant with a number, mainly for computer/data tracking by the Arizona Department of Environmental Quality.

Arizona Department of Environmental Quality  
Drinking Water Inorganic Chemical Analysis Report Form

\*\*\*Entry Point To the Distribution System (EPDS) Only\*\*\*

PWS ID#: AZ0414024 PWS Name: City of Yuma

01/17/2012 0850 (24 hr Clock) Betsy Bowman  
Sample Date Sample Time Owner/Contact Person

928-329-2896 928-373-4588  
Owner/Contact Fax Number Owner/Contact Phone Number

Sample Type  
 Compliance Monitoring

Sample Collection Point  
 EPDS# 002

Agua Viva WTP EPDS 002

Sampling Site ID

<p><b>For MCL or Composite Level Exceedance</b></p> <p>_____ Original Violation Specimen Number</p> <p>Sample Type</p> <p><input type="checkbox"/> Confirmation</p> <p><input type="checkbox"/> Confirmation - Composite</p>
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**INORGANIC CHEMICAL ANALYSIS**  
>>>To be completed by laboratory personnel<<<

Analysis Method	MCL	Reporting Limit	Contaminant Name Method	Cont. Code	Analysis Run Date	Results	Exceeds MCL	Exceeds Reporting Limit
<u>200.8</u>	<u>0.010</u>	<u>0.010</u>	<u>Arsenic</u>	<u>1005</u>	<u>01/20/2012</u>	<u>0.0017</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>2</u>	<u>2</u>	<u>Barium</u>	<u>1010</u>	<u>01/20/2012</u>	<u>0.11</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>0.005</u>	<u>0.005</u>	<u>Cadmium</u>	<u>1015</u>	<u>01/20/2012</u>	<u>&lt;0.0005</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>0.1</u>	<u>0.1</u>	<u>Chromium</u>	<u>1020</u>	<u>01/20/2012</u>	<u>&lt;0.001</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>4500F-C</u>	<u>4</u>	<u>4</u>	<u>Fluoride</u>	<u>1025</u>	<u>01/25/2012</u>	<u>0.42</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>245.1</u>	<u>0.002</u>	<u>0.002</u>	<u>Mercury</u>	<u>1035</u>	<u>01/28/2012</u>	<u>&lt;0.0002</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>300.0</u>	<u>10</u>	<u>5</u>	<u>Nitrate (as N)</u>	<u>1040</u>	<u>01/18/2012</u>	<u>0.23</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>300.0</u>	<u>1</u>	<u>0.5</u>	<u>Nitrite</u>	<u>1041</u>	<u>01/18/2012</u>	<u>&lt;0.05</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>0.05</u>	<u>0.05</u>	<u>Selenium</u>	<u>1045</u>	<u>01/20/2012</u>	<u>&lt;0.005</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>0.006</u>	<u>0.006</u>	<u>Antimony</u>	<u>1074</u>	<u>01/20/2012</u>	<u>&lt;0.001</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>0.004</u>	<u>0.004</u>	<u>Beryllium</u>	<u>1075</u>	<u>01/20/2012</u>	<u>&lt;0.001</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>335.4</u>	<u>0.2</u>	<u>0.2</u>	<u>Cyanide</u>	<u>1024</u>	<u>01/26/2012</u>	<u>&lt;0.005</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>0.1</u>	<u>0.1</u>	<u>Nickel*</u>	<u>1036</u>	<u>01/20/2012</u>	<u>&lt;0.005</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.8</u>	<u>0.002</u>	<u>0.002</u>	<u>Thallium</u>	<u>1085</u>	<u>01/20/2012</u>	<u>&lt;0.001</u>	<input type="checkbox"/>	<input type="checkbox"/>
<u>200.7</u>	<u>No MCL</u>		<u>Sodium*</u>	<u>1052</u>	<u>01/24/2012</u>	<u>130</u>	<input type="checkbox"/>	<input type="checkbox"/>

**Laboratory Information**

>>>To be completed by laboratory personnel<<<

Lab ID Number: AZ0455  
 Specimen Number: 2012011901761  
 Name: MWH Laboratories  
 Printed Name and Phone Number of Lab Contact: Thomas D. French (480) 778 1558  
 Authorized Signature: \_\_\_\_\_  
 Date Public Water System Notified: \_\_\_\_\_  
 Comments: \_\_\_\_\_

All units must be reported in milligrams per liter (mg/L)  
 \*Unregulated Contaminants  
 DWAR 2IN: Revised 8/2009



MWH

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A Division of MWH Americas, Inc.

750 Royal Oak Dr., Suite 100  
Monrovia, California, 91016-3829  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Hits Report: 385990

City of Yuma  
Betsy-Bowman  
Laboratory  
289 N. Figueroa Ave.  
Yuma, AZ 85364

Samples Received on:  
01/18/2012

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
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		201201190176	<u>Agua Viva WTP EPDS 002</u>			mg/L	0.1
01/25/2012	11:13	Agressiveness Index-Calculated		12		None	0.1
01/20/2012	22:15	Alkalinity in CaCO3 units		150		mg/L	2
01/20/2012	21:24	Aluminum Total ICAP/MS		210	200	ug/L	20
01/23/2012	13:10	Anion Sum - Calculated		13		meq/L	0.001
01/20/2012	21:24	Arsenic Total ICAP/MS		1.7	10	ug/L	1

**SUMMARY OF POSITIVE DATA ONLY**

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Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
01/20/2012	21:24	Barium Total ICAP/MS	110	2000	ug/L	2
01/23/2012	13:10	Bicarb.Alkalinity as HCO3calc	180		mg/L	2
01/24/2012	20:56	Calcium Total ICAP	86		mg/L	1
01/25/2012	11:13	Cation Sum - Calculated	12		meq/L	0.001
01/18/2012	22:24	Chloride	130	250	mg/L	5
01/25/2012	12:29	Fluoride	0.42	4	mg/L	0.05
01/23/2012	13:09	Langelier Index - 25 degree	0.62		None	
01/23/2012	13:09	Langelier Index at 60 degrees C	-3.1		None	
01/24/2012	20:56	Magnesium Total ICAP	32		mg/L	0.1
01/18/2012	22:24	Nitrate as Nitrogen by IC	0.23	10	mg/L	0.05
01/18/2012	22:24	Nitrate as NO3 (calc)	1.0	45	mg/L	0.22
01/20/2012	22:15	PH (H3=past HT not compliant)	7.9		Units	0.1
01/25/2012	11:13	pH of CaCO3 saturation(25C)	7.2		Units	0.1
01/23/2012	13:09	pH of CaCO3 saturation(60C)	6.8		Units	0.1
01/24/2012	20:56	Potassium Total ICAP	4.6		mg/L	1
01/24/2012	20:56	Silica	8.4		mg/L	0.5
01/24/2012	20:56	Sodium Total ICAP	130		mg/L	1
01/20/2012	22:15	Specific Conductance, 25 C	1200	900	umho/cm	2
01/18/2012	22:24	Sulfate	290	250	mg/L	2.5
01/24/2012	22:46	Total Dissolved Solids (TDS)	800	500	mg/L	10
01/25/2012	11:13	Total Hardness as CaCO3 by ICP (calc)	340		mg/L	3
01/18/2012	22:24	Total Nitrate, Nitrite-N, CALC	0.23		mg/L	0.1

**SUMMARY OF POSITIVE DATA ONLY**



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01/18/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
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### Agua Viva WTP EPDS 002 (201201190176)

Sampled on 01/17/2012 0850

PWSID: AZ0414024  
Well ID: 002  
Variable ID: 009712

#### **EPA 200.8 - ICPMS Metals**

01/20/2012	21:24	634905	(EPA 200.8)	Aluminum Total ICAP/MS	210	ug/L	20	1
01/20/2012	21:24	634905	(EPA 200.8)	Antimony Total ICAP/MS	ND	ug/L	1	1
01/20/2012	21:24	634905	(EPA 200.8)	Arsenic Total ICAP/MS	1.7	ug/L	1	1
01/20/2012	21:24	634905	(EPA 200.8)	Barium Total ICAP/MS	110	ug/L	2	1
01/20/2012	21:24	634905	(EPA 200.8)	Beryllium Total ICAP/MS	ND	ug/L	1	1
01/20/2012	21:24	634905	(EPA 200.8)	Cadmium Total ICAP/MS	ND	ug/L	0.5	1
01/20/2012	21:24	634905	(EPA 200.8)	Chromium Total ICAP/MS	ND	ug/L	1	1
01/20/2012	21:24	634905	(EPA 200.8)	Copper Total ICAP/MS	ND	ug/L	2	1
01/20/2012	21:24	634905	(EPA 200.8)	Lead Total ICAP/MS	ND	ug/L	0.5	1
01/20/2012	21:24	634905	(EPA 200.8)	Manganese Total ICAP/MS	ND	ug/L	2	1
01/20/2012	21:24	634905	(EPA 200.8)	Nickel Total ICAP/MS	ND	ug/L	5	1
01/20/2012	21:24	634905	(EPA 200.8)	Selenium Total ICAP/MS	ND	ug/L	5	1
01/25/2012	21:01	635913	(EPA 200.8)	Silver Total ICAP/MS	ND	ug/L	0.5	1
01/20/2012	21:24	634905	(EPA 200.8)	Thallium Total ICAP/MS	ND	ug/L	1	1
01/20/2012	21:24	634905	(EPA 200.8)	Zinc Total ICAP/MS	ND	ug/L	20	1

#### **EPA 200.7 - ICP Metals**

01/24/2012	20:56	635643	(EPA 200.7)	Calcium Total ICAP	66	mg/L	1	1
01/24/2012	20:56	635643	(EPA 200.7)	Iron Total ICAP	ND	mg/L	0.02	1
01/24/2012	20:56	635643	(EPA 200.7)	Magnesium Total ICAP	32	mg/L	0.1	1
01/24/2012	20:56	635643	(EPA 200.7)	Potassium Total ICAP	4.8	mg/L	1	1
01/24/2012	20:56	635643	(EPA 200.7)	Sodium Total ICAP	130	mg/L	1	1

#### **EPA 245.1 - Mercury**

Rounding on totals after summation.  
(c) - indicates calculated results

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Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
1/25/2012	01/26/2012	21:00	635907 (EPA 245.1)	Mercury	ND	ug/L	0.2	1
			<b>EPA 200.7 - ICP Metals</b>					
	01/24/2012	20:56	635647 (EPA 200.7)	Silica	8.4	mg/L	0.5	1
			<b>SM2330B - Hydroxide as OH, Calculated</b>					
	01/23/2012	13:09	(SM2330B)	Hydroxide as OH Calculated	ND	mg/L	2	1
			<b>SM 2330B - pH of CaCO3 saturation(60C)</b>					
	01/23/2012	13:09	(SM 2330B)	pH of CaCO3 saturation(60C)	6.8	Units	0.1	1
			<b>SM4500-CO2-D - Carbon Dioxide,Free(25C)-Calc.</b>					
	01/23/2012	13:09	(SM4500-CO2-D)	Carbon Dioxide,Free(25C)-Calc.	ND	mg/L	2	1
			<b>SM 2330B - Langelier Index - 25 degree</b>					
	01/23/2012	13:09	(SM 2330B)	Langelier Index - 25 degree	0.62	None		1
			<b>SM2330B - Carbonate as CO3, Calculated</b>					
	01/28/2012	02:29	(SM2330B)	Carbonate as CO3, Calculated	ND	mg/L	2	1
			<b>SM 2340B - Total Hardness as CaCO3 by ICP</b>					
	01/25/2012	11:13	(SM 2340B)	Total Hardness as CaCO3 by ICP (calc)	340	mg/L	3	1
			<b>SM 1030E - Anion Sum - Calculated</b>					
	01/23/2012	13:10	(SM 1030E)	Anion Sum - Calculated	13	meq/L	0.001	1
			<b>SM 1030E - Cation Sum - Calculated</b>					
	01/25/2012	11:13	(SM 1030E)	Cation Sum - Calculated	12	meq/L	0.001	1
			<b>SM 2330B - pH of CaCO3 saturation(25C)</b>					
	01/26/2012	11:13	(SM 2330B)	pH of CaCO3 saturation(25C)	7.2	Units	0.1	1
			<b>SM2330B - Bicarb.Alkalinity as HCO3,calc</b>					
	01/23/2012	13:10	(SM2330B)	Bicarb.Alkalinity as HCO3calc	180	mg/L	2	1
			<b>SM 2330 - Agressiveness Index-Calculated</b>					
	01/25/2012	11:13	(SM 2330)	Agressiveness Index-Calculated	12	None	0.1	1
			<b>SM 2330B - Langlier Index at 60 degrees C</b>					
	01/23/2012	13:09	(SM 2330B)	Langlier Index at 60 degrees C	-3.1	None		1
			<b>SM 1030E - Cation/Anion Difference</b>					
	01/26/2012	01:03	(SM 1030E)	Cation/Anion Difference	0.79	%		1
			<b>EPA 300.0 - Nitrate, Nitrite by EPA 300.0</b>					
	01/18/2012	22:24	634791 (EPA 300.0)	Nitrate as Nitrogen by IC	0.23	mg/L	0.05	1
	01/18/2012	22:24	634791 (EPA 300.0)	Nitrate as NO3 (calc)	1.0	mg/L	0.22	1
	01/18/2012	22:24	634791 (EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.05	1
	01/18/2012	22:24	634791 (EPA 300.0)	Total Nitrate, Nitrite-N, CALC	0.23	mg/L	0.1	1
			<b>EPA 300.0 - Chloride, Sulfate by EPA 300.0</b>					

Rounding on totals after summation.  
 (c) - indicates calculated results



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Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
	01/18/2012	22:24	634796 (EPA 300.0)	Chloride	130	mg/L	5	5
	01/18/2012	22:24	634796 (EPA 300.0)	Sulfate	290	mg/L	2.5	5
			<b>EPA 335.4 - Cyanide by manual distillation</b>					
1/26/2012	01/26/2012	23:23	636420 (EPA 335.4)	Cyanide by manual distillation	ND	mg/L	0.005	1
			<b>SM 4500F-C - Fluoride</b>					
	01/25/2012	12:29	635766 (SM 4500F-C)	Fluoride	0.42	mg/L	0.05	1
			<b>SM 2320B - Alkalinity in CaCO3 units</b>					
	01/20/2012	22:15	635370 (SM 2320B)	Alkalinity in CaCO3 units	150	mg/L	2	1
			<b>E160.1/SM2540C - Total Dissolved Solids (TDS)</b>					
1/24/2012	01/24/2012	22:46	635663 (E160.1/SM2540C)	Total Dissolved Solids (TDS)	800	mg/L	10	1
			<b>SM4500-HB - PH (H3=past HT not compliant)</b>					
	01/20/2012	22:15	635382 (SM4500-HB)	PH (H3=past HT not compliant)	7.9	Units	0.1	1
			<b>SM 5540C/EPA 425.1 - Surfactants</b>					
	01/18/2012	16:15	634916 (SM 5540C/EPA 425.1)	Surfactants	ND	mg/L	0.05	1
			<b>SM2510B - Specific Conductance</b>					
	01/20/2012	22:15	635387 (SM2510B)	Specific Conductance, 25 C	1200	umho/cm	2	1

Rounding on totals after summation.  
(c) - Indicates calculated results